

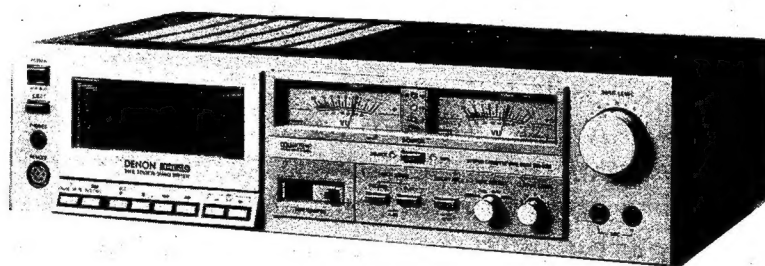
# DENON

Hi-Fi Component

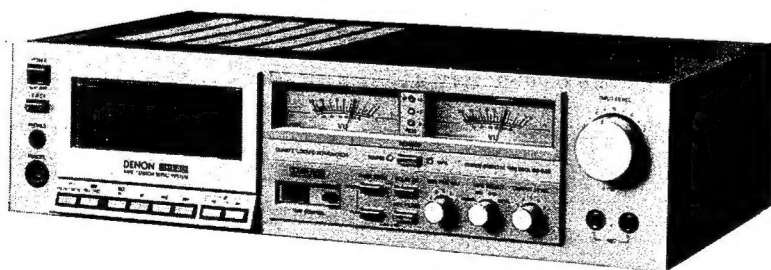
## SERVICE MANUAL

STEREO CASSETTE TAPE DECK

**MODEL**  
**DR-320 / DR-330**



DR-320




DR-330

**NIPPON COLUMBIA CO., LTD.**

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### WARNING:

Parts marked with  are of importance in respect to the safety use the specified type without tail.

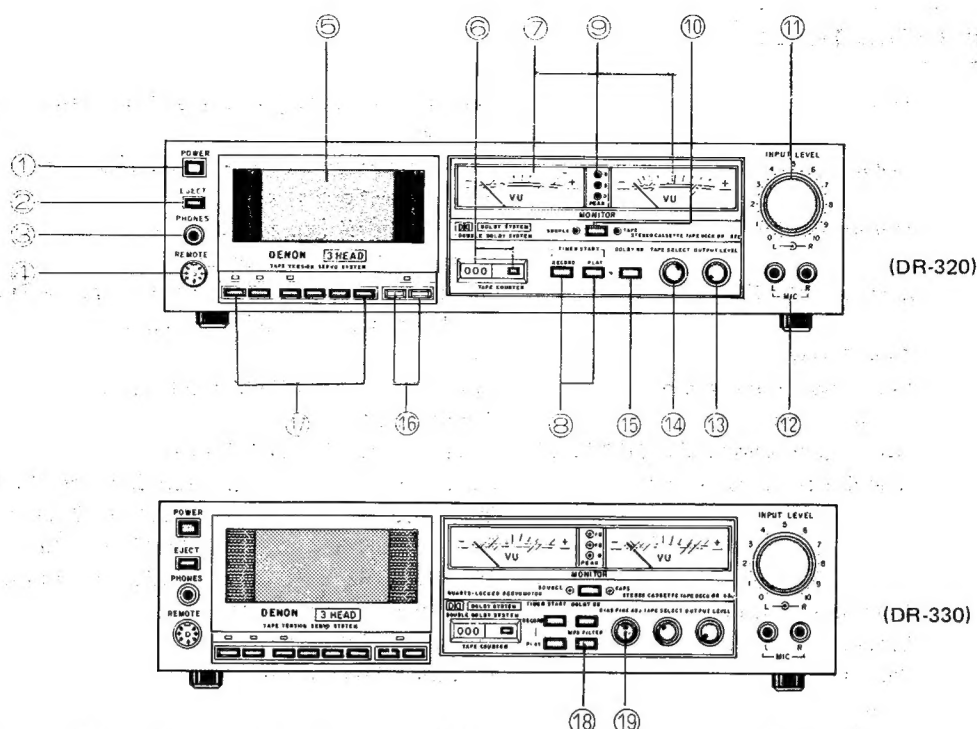
## SPECIFICATIONS

|  |   |
|--|---|
| <b>Type</b>                                | Vertical tape loading 4-track 2-channel stereo cassette tape deck   |
| <b>Heads</b>                               | Recording/Playback combination head (Ferrite) x 1<br>Erase head (Ferrite) x 1   |
| <b>Motors (DR-320)</b>                     | DC servomotor (for capstan) x 1<br>DC motor (for reel winding) x 1  |
| <b>Motors (DR-330)</b>                     | Quartz locked, PLL DC servomotor (for capstan) x 1<br>Coreless motor (for reel winding) x 1   |
| <b>Tape Speed</b>                          | 4.8 cm/sec.   |
| <b>Fast winding, Rewinding time</b>        | Approx. 90 sec. on C-60 cassette tape   |
| <b>Recording bias</b>                      | Approx. 85KHz   |
| <b>Overall S/N ratio (at 3% THD level)</b> | More than 67dB (CCIR/ARM)   |
| <b>Overall frequency response</b>          | 25~21,000Hz (at -20dB on Metal tape)<br>30~20,000Hz (at -20dB on CrO <sub>2</sub> tape)<br>30~19,000Hz (at -20dB on FeCr tape)<br>30~19,000Hz (at -20dB on LH tape) |
| <b>Channel separation</b>                  | More than 40dB (at 1KHz)  |
| <b>Crosstalk</b>                           | More than 65dB (at 1KHz)  |
| <b>Wow &amp; flutter</b>                   | Less than 0.04% w.rms   |
| <b>Inputs</b>                              |   |
| <b>Microphone</b>                          | 0.35mV (-67dB) input level control at maximum.<br>Input impedance: 10K ohm unbalanced   |
| <b>Line</b>                                | 70mV (-21dB) input level control at max.<br>Input impedance: 50K ohm unbalanced   |
| <b>Outputs</b>                             |   |
| <b>Line</b>                                | 775mV (0dB) output level control at max.<br>(with 10K ohm load, recorded level of 200pwb/mm)  |
| <b>Headphone</b>                           | 1.2mW output level control at max.<br>(optimum load impedance 8ohm~2K ohm)  |
| <b>Power supply</b>                        | 50Hz/60Hz compatible  |
| <b>Power consumption</b>                   | 25W   |
| <b>Dimensions</b>                          | 434W x 117H x 300D (mm)   |
| <b>Weight</b>                              | 7.0kg   |

Above specifications and design styling are subject to change for improvement.

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## NAMES OF PARTS AND FUNCTION



### 1 Power switch

Make sure the timer switch is "off" (■) and then turn "on" (■) the power switch. The lamps in the level meters and the tape window light. The set is now ready for operation. Push the switch again to turn "off" (■) the power.

### 2 Eject button

This button opens the cassette compartment to permit removal of the tape cassette.

### 3 Headphone Jack

Use for enjoying music through the headphones or for monitoring. Use a headphone set with an impedance of 8 ohm to 2Kohm.

### 4 Remote control connector

The remote controller (Model RC-55, RC-56), separately available, can be connected for remote control of the deck. Even when the remote controller is connected, the operation buttons on the deck continue to function.

### 5 Cassette compartment

This contains the tape cassette and holds it firmly in position. While the cassette compartment is open, the operation buttons do not function.

### 6 Tape counter

The number in the counter indicates the amount of tape wound up. It is a great convenience if you write down the counter indication as well as the recorded content for instant reference. Press the reset button to reset the counter "000".

### 7 Level meter

Input/output level is indicated. While the monitor switch is set to SOURCE, the input level is indicated. When the switch is set to TAPE, the output level is indicated.

### 8 Timer start switches

\*Be sure to turn to "off" (■) for normal use. If timer start recording is desired, turn to "on" (■) and set the switch at the RECORD position. For timer start playback, turn to "on" (■) and set the switch at the PLAY position.

### 9 Peak level indicator

\*The lamps are designed to indicate +8dB by the red and +5dB by the orange and 0dB by the green lamps. If an excessive level over +8dB is picked up, the red lamp lights.

### 10 Monitor switch

The three head system of this tape deck provides simultaneous monitoring during recording.

#### TAPE (■)

- The recorded sound on tape is monitored during recording (The green lamp lights). Be sure to turn it to the "TAPE" position for playback (replay). If set to the "SOURCE" position, input signals through the input jacks or microphone jacks are monitored but not the playback signals.

#### SOURCE (■)

- The signals through the input jacks or microphone jacks are monitored (The orange lamp lights).

**⑪ Input level control**

The input levels of the right and left channels are independently adjusted in accordance with the signal level to be recorded. The front knob is for the left channel and the rear one is for the right channel. This level control does not function during playback.

**⑫ Microphone jack**

Plug in the microphone plugs for microphone recording. Use microphones with an output level higher than -67dB and a 6mm diam. plug.


**⑬ Output level control**

Playback output level or record monitoring output are adjusted independently from the level meter indicators. The headphone output is also adjusted by this knob.

**⑭ Tape selector**

The recording bias and equalizer are simultaneously switched for the optimum setting for different kinds of tapes, including high performance metal tapes. Select the position according to the kind tape to be used.







**⑮ Dolby NR switch**

Turn "on" (  ) either for DOLBY encoded recording or playback of DOLBY encoded tape.

**⑯ Cueing button**







Press this button in the playback, recording, fast forward, rewind or stop modes for cueing.

**⑰ Tape control buttons**

|  |  |
|--|--|
| PAUSE/MUTE button  | Press this during playback. The tape stops and a green lamp turns off indicating the Pause condition. While the button is being depressed during recording, muted (no sound) recording condition is maintained and the orange lamp flickers at about a one-second interval with the tape running. When the tape stops, and the orange and red lamps light bringing in the standby for recording again, press button (  ). |
| RECORD button  | Load a cassette tape and press this button. This places the unit in standby for recording (pause) and the red and orange lamps light. Press the play button (  ) to start recording.<br>*If the erase prevention tab of the loaded cassette is broken off, this button does not function.  |
| PLAY button<br>         | When pressed during stop, fast forward or rewind, playback begins with the green lamp lights on.<br>When pressed during stand by in the recording (pause) mode, recording starts.  |
| STOP button             | When pressed in any operating mode, operation stops is obtained.   |
| REWIND button           | When pressed, the tape is rewound.   |
| FAST FORWARD button<br> | When pressed, the tape is rapidly wound in the forward direction.  |

**⑱ MPX (multiplex) filter switch (DR-330)**

Set the switch in combination with the DOLBY NR switch as follows:

|  |  |
|--|--|
| DOLBY NR switch off (  )<br>MPX FILTER switch off (  ) | For normal recording and playback.   |
| DOLBY NR switch on (  )<br>MPX FILTER switch off (  )  | For DOLBY encoded recording/playback other than from FM stereo broadcasting. Also for playback of DOLBY encoded tape record. |
| DOLBY NR switch on (  )<br>MPX FILTER switch on (  )   | For DOLBY encoded recording of FM stereo broadcasts.   |

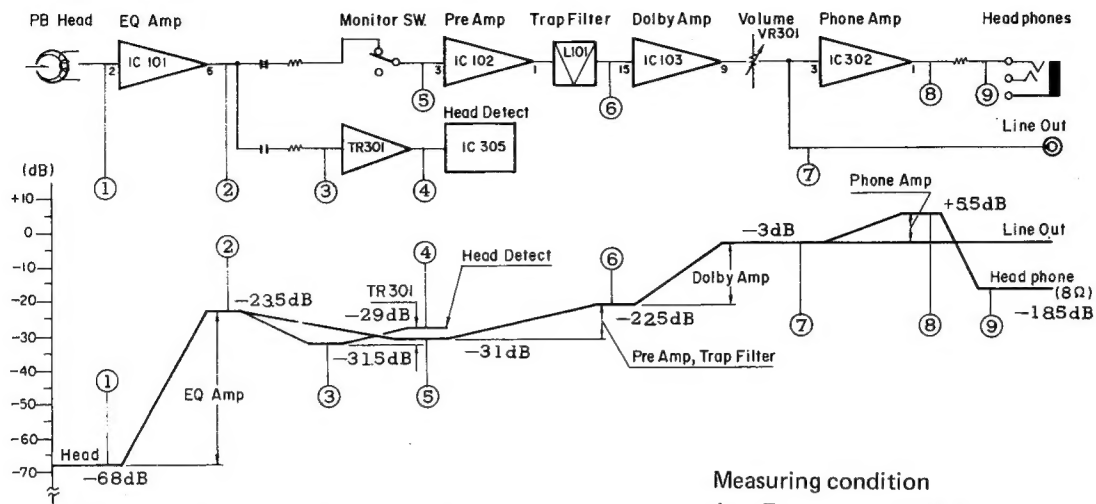
**Note :** The other combination of DOLBY NR switch off (  ) and MPX FILTER switch on (  ) is possible, but the high frequency is slightly reduced.

**⑲ Bias Fine adjustment (DR-330)**

Adjust the bias according to the tape characteristics. Standard biasing is obtained at the center click-stop position. (Refer to the BIAS CHART).

## LEVEL DIAGRAM

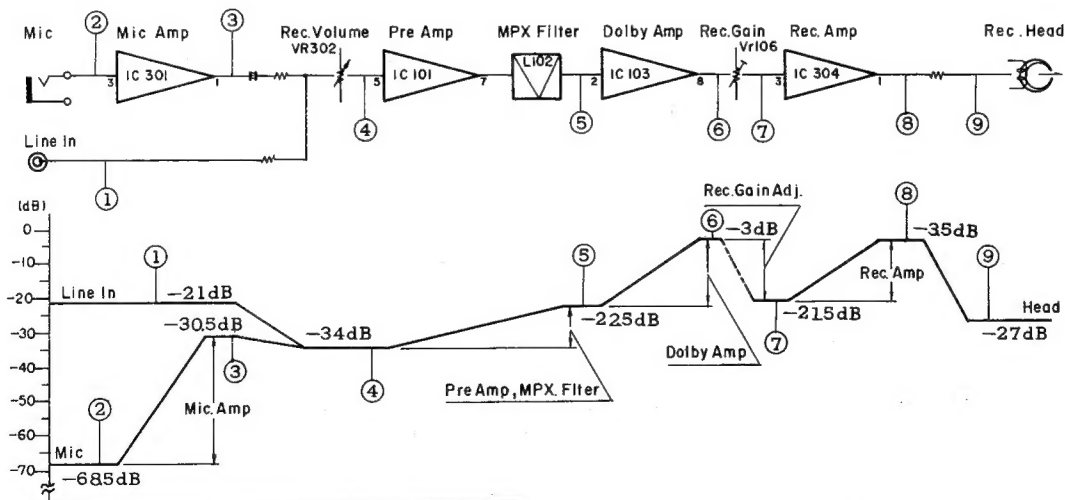
### PLAYBACK SYSTEM LEVEL DIAGRAM



#### Measuring condition

1. Frequency: 1 KHz  
Input impedance: 600Ω
2. Play head: Open
3. Tape selector switch: CrO<sub>2</sub>
4. Line output: 0 VU (-3dB)
5. VR301: MAX position

### RECORDING SYSTEM LEVEL DIAGRAM



#### Measuring condition

1. Frequency: 1 KHz  
Input impedance: 600Ω
2. Tape selector switch: CrO<sub>2</sub>
3. Record/Play output: 0 VU (-3dB)
4. VR106 (REC): MAX position

# TAPE SELECTOR/BIAS ADJ/CHART

Set the tape selector position and bias adjustment for recording and playback to yield the best tape performance with the least distortion by referring to the chart below:

| Brand  | Type No.   | Tape selector position | Bias Scale (DR-330) | Brand  | Type No. | Tape selector position | Bias Scale (DR-330) |
|--------|------------|------------------------|---------------------|--------|----------|------------------------|---------------------|
| DENON  | DX 1       | C-50 NORMAL            | +2                  | maxell | UD       | C-60 NORMAL            | 2                   |
|        |            | C-90 NORMAL            | 0                   |        |          | C-90 NORMAL            | 0                   |
|        | DX 3       | C-60 NORMAL            | 0                   |        | XL I     | C-60 NORMAL            | +1                  |
|        |            | C-90 NORMAL            | -2                  |        |          | C-90 NORMAL            | 0                   |
|        | DX 5       | C-60 FeCr              | 0                   |        | XL II    | C-60 CrO <sub>2</sub>  | 0                   |
| SONY   |            | C-90 FeCr              | -2                  | TDK    |          | C-90 CrO <sub>2</sub>  | -2                  |
|        | DX 7       | C-60 CrO <sub>2</sub>  | -2                  |        | XL II-S  | C-46 CrO <sub>2</sub>  | +3                  |
|        |            | C-90 CrO <sub>2</sub>  | -2                  |        |          | C-90 CrO <sub>2</sub>  | +2                  |
|        | DXM        | C-50 METAL             | 0                   |        | MX       | C-46 METAL             | -1                  |
|        | AHF        | C-60 NORMAL            | +2                  |        |          | C-90 METAL             | -1                  |
| SONY   |            | C-90 NORMAL            | +1                  | TDK    | D        | C-60 NORMAL            | -6                  |
|        | BHF        | C-60 NORMAL            | -2                  |        |          | C-90 NORMAL            | -8                  |
|        |            | C-90 NORMAL            | -2                  |        | AD       | C-60 NORMAL            | 0                   |
|        | CHF        | C-60 NORMAL            | -2                  |        |          | C-90 NORMAL            | +2                  |
|        |            | C-90 HORMAL            | -8                  |        | OD       | C-60 NORMAL            | +1                  |
| FUJI   | JHF        | C-60 CrO <sub>2</sub>  | 0                   | BASF   |          | C-90 NORMAL            | +1                  |
|        |            | C-90 CrO <sub>2</sub>  | 0                   |        | SA       | C-60 CrO <sub>2</sub>  | -4                  |
|        | DUAD       | C-60 FeCr              | 0                   |        |          | C-90 CrO <sub>2</sub>  | -4                  |
|        |            | C-90 FeCr              | -4                  |        | SA-X     | C-46 CrO <sub>2</sub>  | 0                   |
|        | METALLIC   | C-46 METAL             | -4                  |        |          | C-90 CrO <sub>2</sub>  | 0                   |
| SCOTCH |            | C-90 METAL             | -2                  | BASF   | MA       | C-46 METAL             | 0                   |
|        | DR         | C-60 NORMAL            | 0                   |        | MA-R     | C-90 METAL             | -2                  |
|        |            | C-90 NORMAL            | +1                  |        | SLH I    | C-60 NORMAL            | 0                   |
|        | ER         | C-60 NORMAL            | 0                   |        |          | C-90 NORMAL            | 0                   |
|        |            | C-90 NORMAL            | +1                  |        | SCR      | C-60 CrO <sub>2</sub>  | 0                   |
| SCOTCH | UR         | C-60 CrO <sub>2</sub>  | 0                   | BASF   |          | C-90 CrO <sub>2</sub>  | +2                  |
|        |            | C-90 CrO <sub>2</sub>  | -1                  |        | FCR      | C-60 FeCr              | +1                  |
|        | SR         | C-46 METAL             | 0                   |        |          | C-90 FeCr              | -6                  |
|        |            | C-90 METAL             | 0                   |        |          |                        |                     |
|        | CRYSTAL    | C-60 NORMAL            | -4                  |        |          |                        |                     |
| SCOTCH |            | C-90 NORMAL            | -3                  |        |          |                        |                     |
|        | MASTER I   | C-60 NORMAL            | 0                   |        |          |                        |                     |
|        |            | C-90 NORMAL            | +1                  |        |          |                        |                     |
|        | MASTER II  | C-60 CrO <sub>2</sub>  | -2                  |        |          |                        |                     |
|        |            | C-90 CrO <sub>2</sub>  | -2                  |        |          |                        |                     |
| SCOTCH | CLASSIC    | C-60 FeCr              | -6                  |        |          |                        |                     |
|        | MASTER III | C-60 FeCr              | 0                   |        |          |                        |                     |
|        |            | C-90 FeCr              | -2                  |        |          |                        |                     |
|        |            |                        |                     |        |          |                        |                     |
|        | METAFINE   | C-46 METAL             | -6                  |        |          |                        |                     |

## [ I ] DISASSEMBLY

Parts numbers in ( ) are referred to the numbers on the parts list.

### 1. Removal of top cover

Remove six screws (310) on both sides of the top cover (220) and one screw (311) on the rear. The top cover will now be removed.

#### NOTE

When reassembling, be sure to observe the following points:

- (1) The top cover should be fitted as close to the front panel as possible.
- (2) Gently depress the top cover so that it properly engages the front panel.

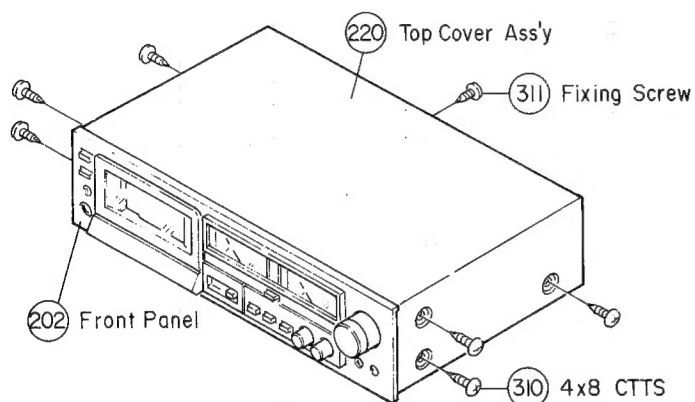


Fig. 1

### 2. Removal of bottom plate

Remove two screws (307) on the bottom plate (231), two screws (301) on the mechanism unit, feet (234), and four screws (308). The bottom plate will be removed.

#### NOTE

When reassembling the bottom plate, secure it with the screws (308, 307, 301) in that order.

(The audio circuit can be serviced by removing the top cover and bottom plate.)

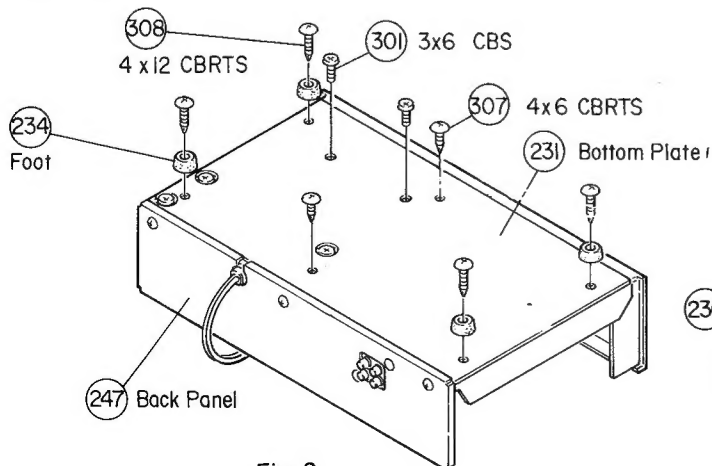


Fig. 2

### 3. Removal of front panel

3-1 Remove the top cover (see Item 1).

3-2 Depress the eject button to open the cassette box. Push the door frame (212) up until it is released from the cassette box, then close the cassette box.

#### NOTE

Special care should be taken when handling the door frame, since it is easily damaged.

3-3 Remove six screws (309) on the upper and lower sides of the front panel (202), then remove the front panel by pulling it toward you.

#### NOTE

When removing the front panel, make sure that the knobs, meter frame, etc. are not damaged.

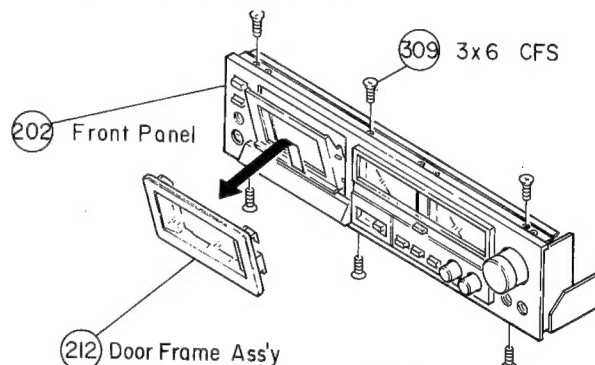


Fig. 3

### 4. Removal of control buttons

4-1 Remove the front panel (see Item 3).

4-2 Push both sides of the button guide (223) with fingers to remove the hook from the square hole in the front chassis (237). Pull and remove the front chassis.

4-3 Desolder the LED (228, 229, 230) from the control button circuit board (226). Also, remove the circuit board (223) of the button guide secured at eight places. The control button circuit board will be separated from the button guide. Remove the cushion (225) and control buttons (224).

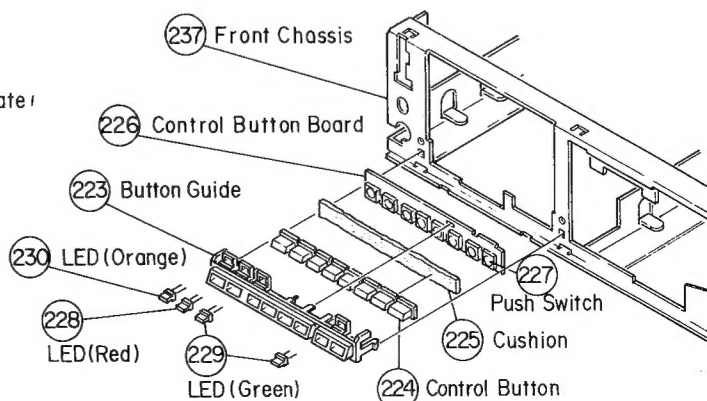


Fig. 4



## NOTE

When reassembling, be sure to observe the following points:

- (1) Check the push switch (227) for proper function, then fit the control buttons in the new button guide.  
Attach the cushion to the control buttons. Mount the control button circuit board by soldering at eight places. Also, solder the LED.
- (2) In mounting the button guide, the lead wires of the control button circuit board should be dressed carefully.
- (3) If the cushion is not fitted to the push switch or it is not properly fitted, the control buttons become loose, resulting in the buttons being left depressed.
- (4) Use a low temperature soldering iron when mounting the button guide and control button circuit board.

## 5. Removal of level meter

- 5-1 Remove the top cover (220) and front panel (202) (see Items 1 and 3).
- 5-2 Remove the drive belt from the counter (205).
- 5-3 Pull and remove the knob (215).
- 5-4 The front escutcheon (204 or 272) is fitted to the front chassis (237) by a hook. Remove the hook from the rear of the front chassis before removing the escutcheon.
- 5-5 The level meter (248) is fitted to the rear of the front escutcheon by hooks. Depress two hooks on the bottom of the level meter and remove the level meter.

## NOTE

- \* When reassembling, check to make sure that the level meter is properly fitted to the meter frame on the front escutcheon.
- \* Mount the knobs observing the match marks.

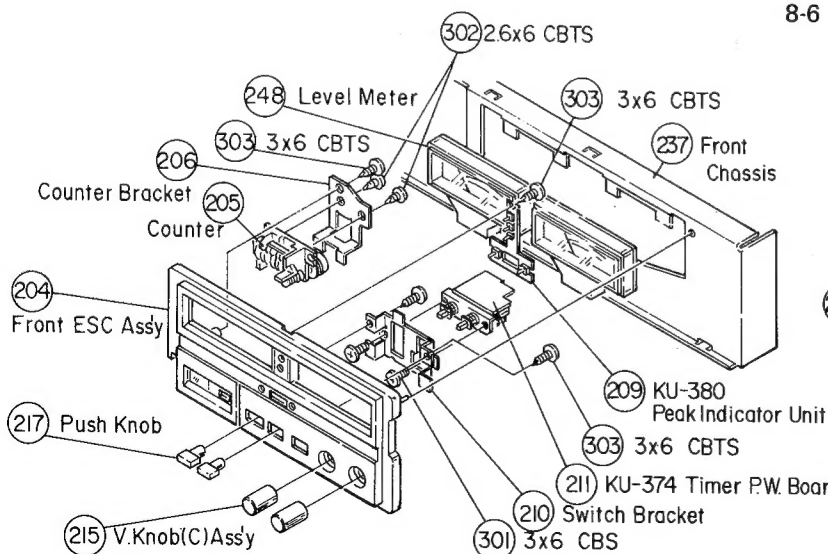


Fig. 5

## 6. Removal of counter

- 6-1 Remove the top cover (220), front panel (202) and counter belt (50), then remove the front escutcheon (204 or 272) from the front chassis (237).
- 6-2 Remove the screw (303) holding the counter bracket (206) at the rear of the front escutcheon. Slide the counter bracket until the lower hook is disengaged. The counter bracket will be removed together with the counter (205).
- 6-3 Remove two screws (302) holding the counter.

## 7. Removal of peak indicator unit(KU-380)

- 7-1 Remove the front escutcheon (204 or 272) (see Item 5-4).
- 7-2 Remove the screw (303), holding the peak indicator unit (209) at the rear of the front escutcheon, and two hooks.  
(When reassembling, check to make sure that the five indicator LED's are firmly fitted to the front escutcheon.)

## 8. Removal of mechanism unit

- 8-1 Remove the top cover (220) and front panel (202).
- 8-2 Remove the hole IC circuit board (see Item 21 "Replacement of hole IC" on mechanism adjustment and check).
- 8-3 Disconnect the lead wires from the head. Remove four connectors (two 2P, one 3P and one 4P) from the audio circuit board (249).

## NOTE

The orange and white lead wires connected to the two 2P connectors are for R channel and L channel, respectively. Check that the connectors are plugged correctly.

- 8-4 Remove the 12P connector from the driver circuit board (251) mounted at the rear of the mechanism unit (200 or 201).
- 8-5 Remove four screws (301) on the front of the mechanism unit and two screws (301) holding the bottom plate (231).
- 8-6 With the mechanism unit lowered as far as it will go, lift it up for removal.

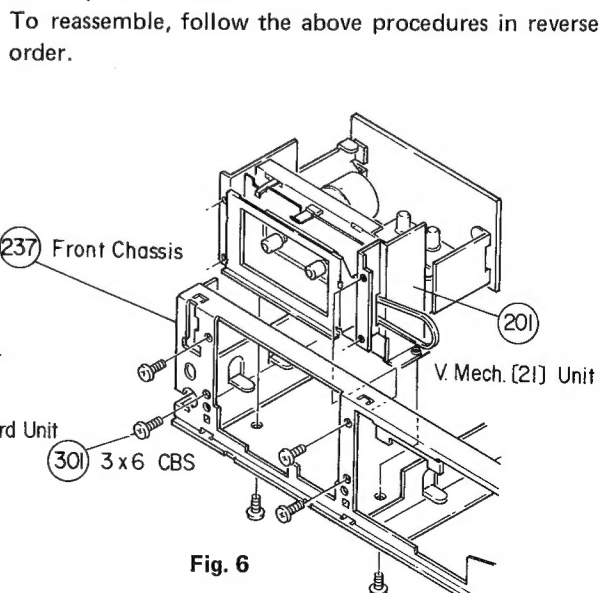


Fig. 6

## 9. Removal of driver circuit board (KU-379)

First remove the top cover (220), then remove three screws (301) from the driver circuit board (251). Release the lead wires from the wire clamp. The circuit board will now be removed for servicing.

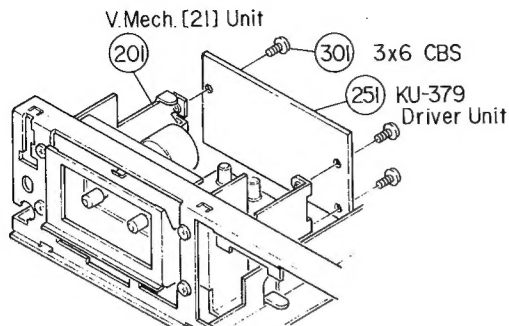


Fig. 7

## 10. Removal of logic and power unit (KU-378)

The logic and power unit can be serviced by removing the bottom plate (231). If it cannot be serviced even after removing the bottom plate, then remove the unit observing the following procedures.

- 10-1 First remove the top cover (220), then remove three screws (305) from the back panel (247), two screws (306) from the 4P connector base (266) and two screws (305) from the transformer bracket (235). The back panel will now be removed.
- 10-2 Remove two screws (305) holding the transformer (243), then remove the transformer from the chassis, with the lead wires left connected.
- 10-3 Remove two screws (303) on the logic and power unit (250) and two P.W.B supports (236). Slide the unit until it is released from the hook, then slide it backward while holding it by hand.

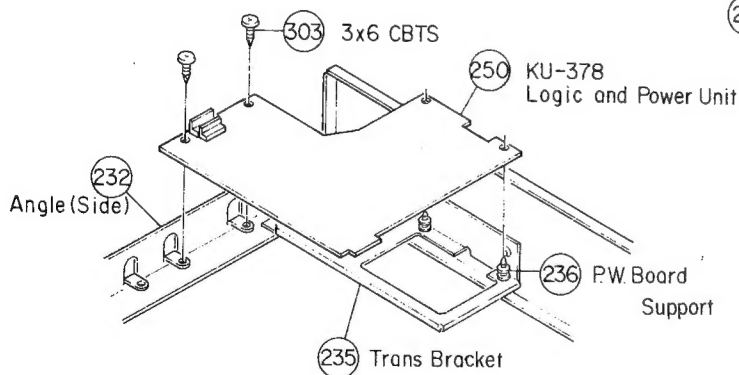


Fig. 8

## 11. Removal of audio amplifier unit (KU-365)

- 11-1 Pull and remove the knob C (215).
- 11-2 Remove the top cover (220), front panel (202) and front escutcheon (204 or 272) referring to the procedures outlined previously.
- 11-3 Remove the nuts holding the selector switch (260), output volume control (261) and MIC jack (262).
- 11-4 Pull and remove the push lever D (218) and F (219) from the push switches (264, 265).
- 11-5 Remove the back panel referring to the procedures outlined in the previous Item 10-1.
- 11-6 Remove four screws (303) from the audio amplifier unit (249). The unit will now be removed from the rear side.

### NOTE

1. When the connector has been removed, be sure to replace it correctly at the time of reassembly.
2. Normally, the audio amplifier unit can be serviced by simply removing the bottom plate (231). Do not remove the unit unnecessarily.

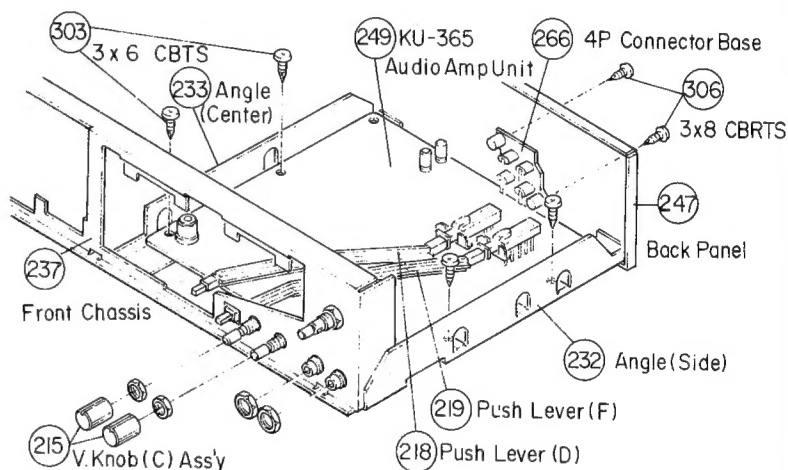


Fig. 9

## [II] MECHANISM ADJUSTMENT AND CHECK

### 1. Replacement of pinchroller (23)

Before replacing the pinchroller, clean the surfaces of the pinchroller and capstan (20) over which tape travels. Deposits of dirt and dust on the pinchroller and capstan can result in incorrect tape transport and malfunction of the pinchroller.

Remove the pinchroller spring (25) and 2.5 E-ring (123), and the pinchroller (23) can be withdrawn together with the pressure bracket.

When reassembling, the shaft of the pressure bracket (24) must be fitted into the oval hole in the connecting lever (9) at the rear of the mechanism chassis (1).

After the pinchroller has been replaced, make a test using a C-90 tape without pads to insure that the tape is not curled at the tape guide adjacent to the head.

### 2. Checking the pinchroller pressure

With the tape deck set in playback mode, attach a dial tension meter (500 g) to the bracket on the center line of the pinchroller. Release the pinchroller from the capstan and then make it contact with the capstan. When the pinchroller starts running, measure the pinchroller pressure with the dial tension gauge. The pressure should be 375-475 g. If the measured pressure is incorrect, replace the pinchroller spring.

#### NOTE

In the playback mode, the gap between the pinchroller bracket and the pressure bracket should be more than 0.5 mm.

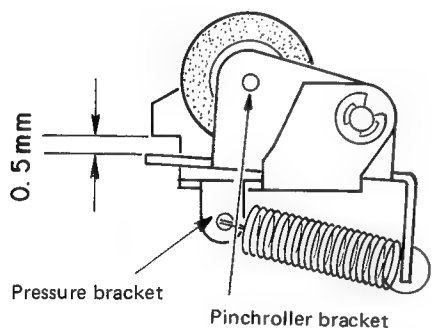


Fig. 10

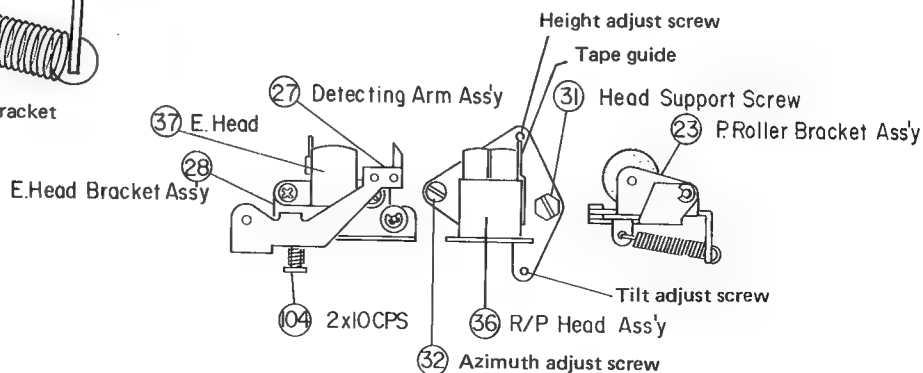


Fig. 12

### 3. Replacement of record/play head (36)

Remove the record/play head by loosening the head support screw (31). Next, loosen the azimuth adjust screw (32) and the record/play head can be pulled out of the mechanism. To mount the head, follow the above procedures in reverse order. Visually check that the head case and cassette are in parallel each other.

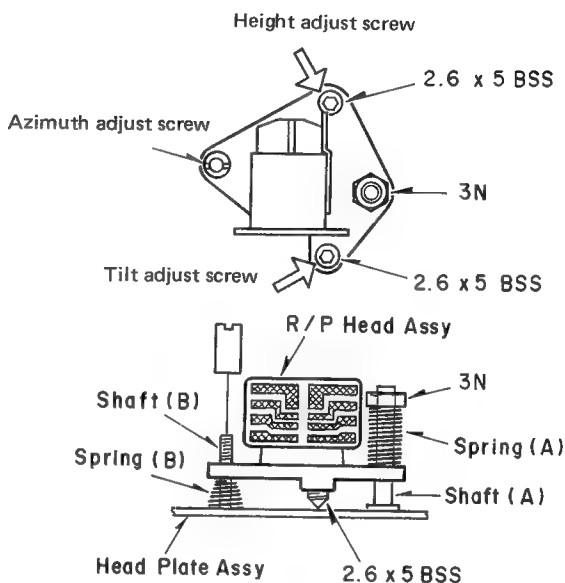


Fig. 11

### 4. Height/Tilt adjustment of record/play head

Load a cassette (C-90) without head pads and play the tape. Check that the tape edge is not curled (bent) at the tape guide fitted to the head, then tighten the head support screw (31). Next, tighten the azimuth adjust screw (32) until the head is centered. Turn the two tilt adjust screws on the front and back of the head, observing the condition of the tape transport, so that the tape is not curled.

## 5. Replacement of erase head (37)

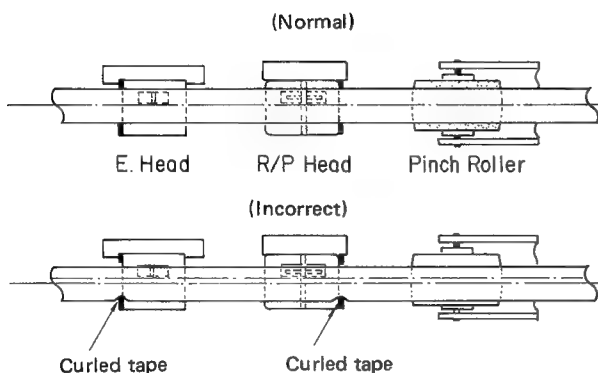
Remove the 2 E-ring (122) on the detecting arm (27) and two screws (116) retaining the erase head.

## 6. Height adjustment of erase head

Attach washers to the boss of the erase head bracket (28) and to the top and bottom of the shaft of the head plate (26). Play a tape (C-90) without head pads and adjust the thickness of the washers so that the tape is not curled.

### NOTE

Tape heads should be replaced individually.



Tape transport condition

Fig. 13

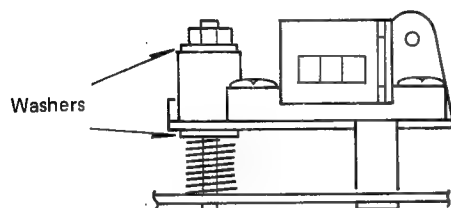


Fig. 14

## 7. Adjustment of gap between head plate and erase head bracket in playback mode

Adjust the mounting position of the erase head to obtain a gap of 0.3~0.7 mm between the erase head bracket and head plate.

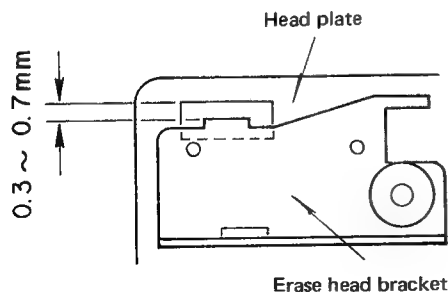


Fig. 15

## 8. Adjustment of gap between detecting arm (27) and erase head bracket

Pull the head plate as far as it will go during playback of tape. Turn the adjust screw to obtain a gap of 0.5~0.8 mm between the detecting arm and the erase head bracket.

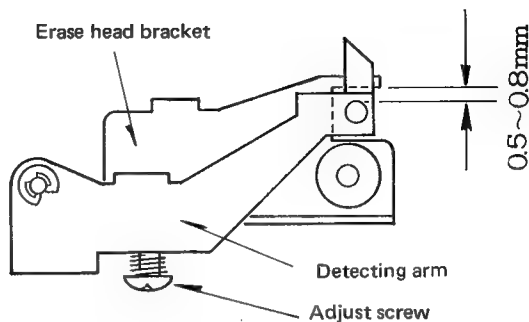


Fig. 16

## 9. Adjustment of axial play of capstan

Hold the capstan from the front of the mechanism. Adjust the thrust screw (56) to obtain an axial play of 0.1~0.4 mm. After the adjustment, secure the thrust screw with lock paint.

## 10. Adjustment of main belt drive position

Adjust the position of the pulley of the capstan motor so that the main belt runs 0.5 mm away from the edge of the flywheel.

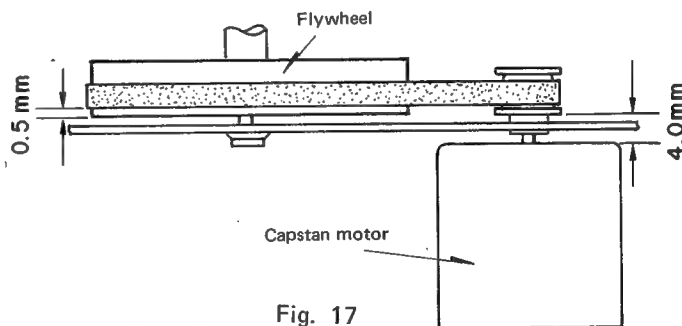


Fig. 17

## 11. Adjustment of excessive stroke of play solenoid

Pull the play solenoid as far as it will go. Then, adjust the mounting position of the bracket (8) retaining the solenoid so that the slide bracket (5), at the rear side of the mechanism, shifts about 0.3~0.5 mm after the head plate (26) touched the stopper.

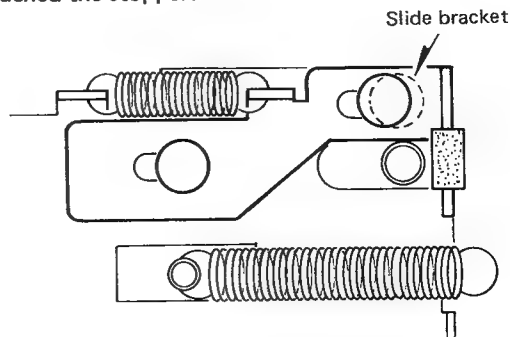


Fig. 18

## 12. Checking the tape take-up torque

Using a cassette type torque meter, check that the tape take-up torque is 35~70 g.cm in the middle of tape. If the measured torque is deviated, check to see that the voltage at the reel motor is 2.1V. The torque decreases when the voltage is low, and increases when it is high. Also, check the reel thrust play in Item 13.

## 13. Adjustment of reel thrust play

Washers (132) 0.13t, (133) 0.25t and (134) 0.5t are fitted to the front and back of the reel. Change these washers to adjust the thrust play for 0.2~0.4 mm.

## 14. Checking the FF and REW torque

- \* Checking with cassette type torque meter  
Check that the torque meter indicates 80~160 g.cm at the end of rewind and fast forward of tape
- \* Checking with modified cassette (see Service Manual "Model DR-230", page 12)  
Load a modified cassette and hook the end of the dial tension meter (100~300 g full scale) on the triangle section of the cassette. Set the tape in FF (REW) mode and run the tape at a speed a little slower than the normal speed. Confirm that the tension meter indicates more than 60 g.cm.

## 15. Checking the pressures of FR idler (41) and reel (42)

With a tape set in FF or REW mode, check that the pressure is 40~60 g when the FR idler is released from the pulley (48) of the reel motor. If the specified pressure cannot be obtained, replace the pressure spring (91). When the FR idler and reel idler are worn out, they must be replaced with new ones.

## 16. Checking the back tension in record/play mode

Using a cassette type torque meter, check that the back tension in playback is 2~5 g.cm. If the back tension is deviated, refer to the item "Adjustment of reel thrust play". Also replace the spring (51).

## 17. Checking the FF and REW time

Using a C-60 cassette, check that the FF and REW time is 60~100 seconds. If deviated, refer to Items 13 and 15.

## 18. Checking the CUE time

Using a C-60 cassette, check that the CUE time is 90~130 seconds.

## 19. Adjustment of erase preventive lever position

Adjust the mounting position of the switch (86) so that it turns ON and OFF positively when a cassette is loaded.

## 20. Adjustment of EJECT switch (87)

Adjust the mounting position of the switch so that it opens 0.3~0.7 mm when the cassette box is closed, and that it is switched on by the gap between the EJECT button lever and the switch just before the cassette box opens.

## 21. Replacement of hall IC and adjustment of its position

The hall IC unit (207) can be removed by lifting the head of the canoe rivet (208) with a screwdriver or a nippers. Adjust the mounting position of the hall IC referring to Fig. 19.

### NOTE

The removed canoe rivet cannot be reused and should be replaced with a new one.

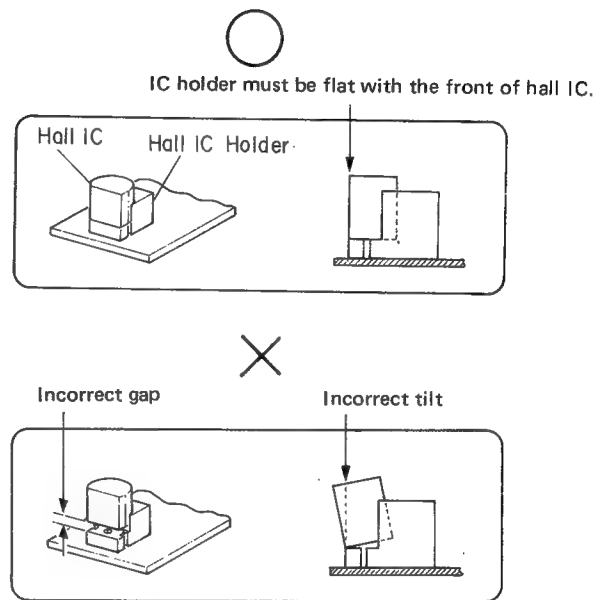


Fig. 19

## 22. Checking the position of cassette spring

With a cassette loaded, check that the cassette is held by the cassette spring (69) in the stop mode of tape.

### [III] ELECTRICAL ADJUSTMENT

#### \* Test instrument for adjustment

1. Adjusting screwdriver
2. Adjusting rod (square) for trap coil adjustment
3. Audio frequency generator
4. Variable resistance attenuator
5. Vacuum tube voltmeter
6. Oscilloscope
7. Frequency counter
8. Test tape (TEAC MTT-111, -114, -150, -316 or 116K)  
(MAXELL XL-II) C-60
9. Cassette (Columbia C-120, modified)

#### \* Cautions of adjustment

1. Before making adjustment, clean the surfaces of the heads, capstan and pinch roller with a gauze or cotton swab moistened with alcohol.
2. Demagnetize the record/play head and erase head using a head eraser.
3. Thoroughly demagnetize the adjusting screwdriver.
4. Set the input volume control to the MAX (clockwise) position.
5. Unless otherwise specified, set the switches and knobs as shown below. For adjustment, use LINE IN and LINE OUT jacks.

(Asterisk (\*) items apply to DR-330 only.)

- DOLBY NR switch . . . . . OFF  
 TAPE SELECT switch . . . CrO<sub>2</sub>  
 MONITOR switch . . . . . TAPE  
 OUTPUT LEVEL knob . . . MAX (clockwise)  
 \* MPX FILTER . . . . . OFF  
 \* BIAS FINE ADJ . . . . . 0

#### 1. Checking the tape transport

Accurate tape transport is most important for the optimum performance of the tape deck. Do not touch the adjusting parts unnecessarily.

When the record/play head needs to be replaced or adjusted, follow the procedures outlined in item "[II] Mechanism adjustment and check". To check the tape transport, load a cassette and set it in playback mode. Confirm that the tape edge does not interfere with the tape guide adjacent to the record/play head, using a lamp or a similar tool.

#### 2. Adjustment of playback system

##### 2-1 Azimuth adjustment

After checking the tape transport in Item 1 above, play a test tape (TEAC MTT-114). Adjust the azimuth screw so that the Lissajous' figure is maximum at the "A" portion and minimum at the "B" portion.

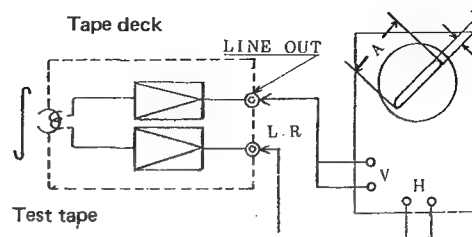


Fig. 20

##### 2-2 Tape speed adjustment (DR-320 ONLY)

Connect a digital counter to the LINE OUT and play a test tape (TEAC MTT-111). When the tape transport has been stabilized, make adjustment at the rear of the capstan motor until the digital counter indicates  $3000 \pm 6$  Hz.

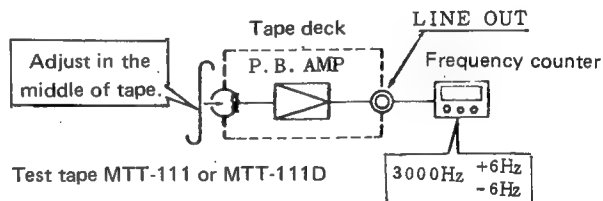


Fig. 21

##### 2-3 Playback level adjustment

Play a Dolby level test tape (TEAC MTT-150) and adjust Vr101 and 201 until the voltage at the LINE OUT becomes 0.dB (0.775 V).

##### 2-4 Adjustment of playback frequency response

Play a test tape (TEAC MTT-116K) and adjust Vr102 and 202 to obtain the frequency characteristic shown in Fig.22.

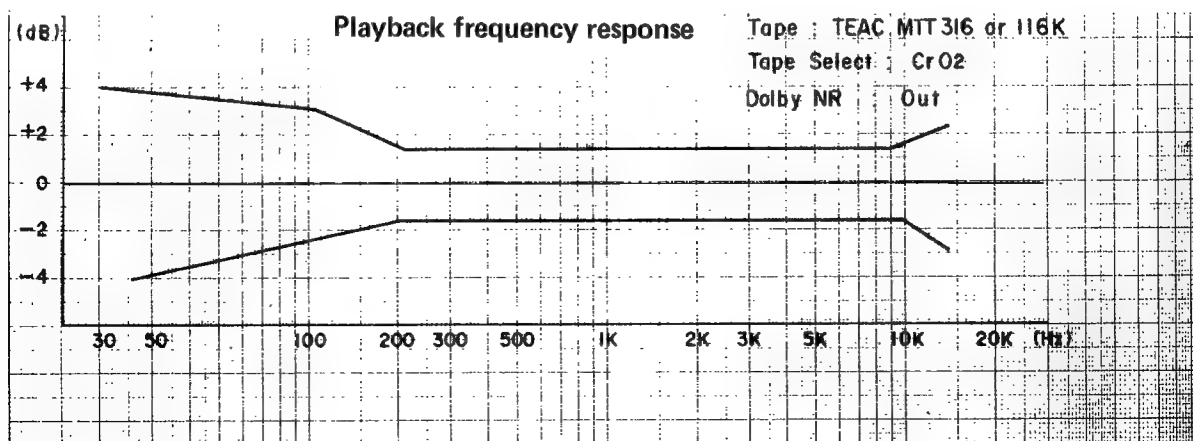


Fig. 22

### 3. Meter adjustment

During the adjustment of playback level, adjust Vr105 and 205 so that the VU meter indicates +3VU when the voltage at LINE OUT is 0dB.

### 4. DOLBY LAW adjustment

Connect a 5 kHz signal to the LINE IN and adjust the input level to obtain a voltage of -30.5dB at the test point DOLBY(L). Next, turn the DOLBY NR switch to ON and adjust Vr103 until the voltage is increased by 8dB and reaches -22.5dB.

Similarly, adjust Vr203 at the test point DOLBY (R).

### 5. Adjustment of recording system

#### 5-1 Adjustment of erase voltage

With the TAPE SELECT switch in the METAL position, set a tape in recording mode. Adjust Vr302 until the voltage at the test point ERASER CUR becomes 40V at room temperature of 20°C when measured with an AC voltmeter (capable of measuring 85 kHz). When the room temperature differs from 20°C, use the conversion table in Fig. 23.

Room temperature vs. ERASER CUR  
conversion table

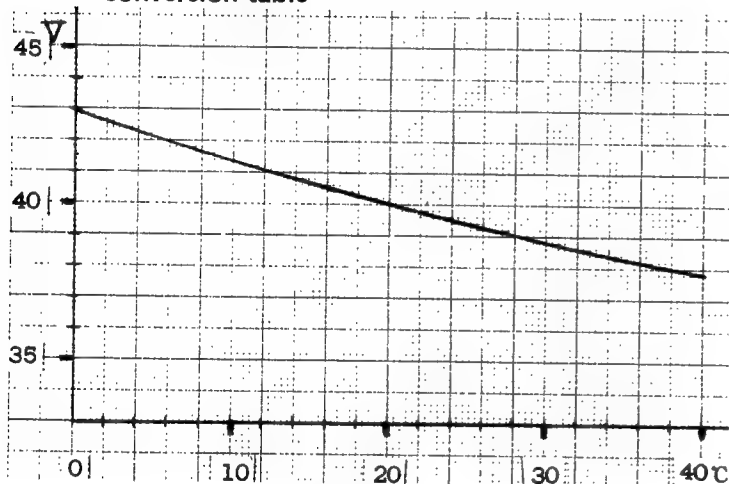


Fig. 23

#### 5-2 Adjustment of bias trap coil

With the TAPE SELECT switch in METAL position, set a tape in recording mode. Adjust the trap coils L104 and 204 to obtain a minimum voltage at the check point BIAS TRAP.

#### 5-3 Adjustment of record/play frequency response

With the TAPE SELECT switch in CrO<sub>2</sub> position, load a test tape C-60 (MAXELL XL-II) and record 1 kHz and 8 kHz signals respectively at output level of -20VU (input level: about -43dB). Adjust Vr107 and 207 so that the 8 kHz signal output is about equal to the 1 kHz signal output. Check to make sure that the overall frequency response is within the range shown in Fig. 24.

\* When the 8 kHz output is larger than the 1 kHz output, turn Vr107 and 207 clockwise, and vice versa.

#### 5-4 Adjustment of record/play level

With the TAPE SELECT switch in CrO<sub>2</sub> position, load a test tape (MAXELL-XL-II). Record the 400 Hz signal at output level of -10 VU (input level: about -31dB). Adjust Vr106 and 206 so that the same output level can be obtained at the SOURCE and TAPE positions of the MONITOR switch.

(With the above adjustment, output levels at other tape positions are automatically adjusted.)

#### \* Beat noise

If the tape deck is used near an AM tuner, a beat noise may be heard in recording. Place the tape deck away from the AM tuner.

Overall frequency response

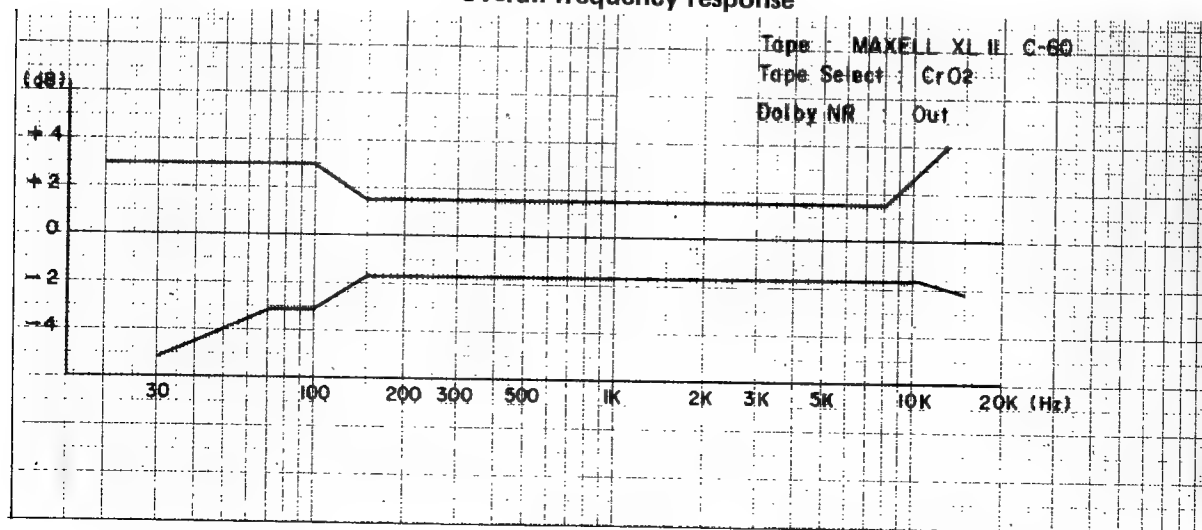


Fig. 24

# PARTS LIST

## KU-365H AUDIO AMP UNIT

| Ref. No.   | Part No.   | Part Name    | Remarks                                      |
|--|------------|--------------|--|
| <b>SEMICONDUCTOR GROUP</b>                             |            |              |  |
| IC305  | 2620325008 | BA335        |  |
| IC101, 201   | 2630065015 | TA7136AP     |  |
| IC306  | 2630092004 | LB1416       |  |
| IC103, 203   | 2630096000 | HA11226      |  |
| IC302  | 2630125007 | $\mu$ PC4557 |  |
| JC101, 202,<br>301, 303,<br>304                        | 2630126006 | $\mu$ PC4558 |  |
| TR306  | 2710105002 | 2SA966Y      |  |
| TR310  | 2730021030 | 2SC458C      |  |
| TR304, 305   | 2730111050 | 2SC1213AC    |  |
| TR309  | 2730195005 | 2SC2060Q     |  |
| TR101~103,<br>201~203,<br>301~303,<br>307, 308,<br>311 | 2730204019 | 2SC2320F     |  |
| D101, 104,<br>201, 204                                 | 2760001004 | 1N34A        |  |
| D103, 203  | 2760002003 | 1N60         |  |
| D102,<br>105~107,<br>202, 205,<br>206, 303,<br>304     | 2760049008 | 1S2076       |  |
| ZD301  | 2760053007 | HZ12A        |  |
| ZD302  | 2760244007 | MZ303A       |  |
| SA101, 201,<br>301                                     | 2760118007 | D33A         |  |
| <b>RESISTOR GROUP</b>                                  |            |              |  |
| R338   | 2412048001 | RD14B2E150J  | Carbon film<br>15 $\Omega$ J $\frac{1}{4}$ W |
| R321, 322  | 2412056006 | RD14B2E330J  | 33 $\Omega$ J $\frac{1}{4}$ W                |
| R334, 335  | 2412058004 | RD14B2E390J  | 39 $\Omega$ J $\frac{1}{4}$ W                |
| R137, 237  | 2412068007 | RD14B2E101J  | 100 $\Omega$ J $\frac{1}{4}$ W               |
| R132, 232  | 2412070008 | RD14B2E121J  | 120 $\Omega$ J $\frac{1}{4}$ W               |
| R105, 205,<br>163, 263,<br>323                         | 2412072006 | RD14B2E151J  | 150 $\Omega$ J $\frac{1}{4}$ W               |
| R123, 223,<br>150, 250                                 | 2413074004 | RD14B2E181J  | 180 $\Omega$ J $\frac{1}{4}$ W               |
| R302   | 2412076002 | RD14B2E221J  | 220 $\Omega$ J $\frac{1}{4}$ W               |
| R305, 310  | 2412078000 | RD14B2E271J  | 270 $\Omega$ J $\frac{1}{4}$ W               |
| R336   | 2412080001 | RD14B2E331J  | 330 $\Omega$ J $\frac{1}{4}$ W               |
| R324   | 2412082009 | RD14B2E391J  | 390 $\Omega$ J $\frac{1}{4}$ W               |
| R147, 247  | 2412085006 | RD14B2E511J  | 510 $\Omega$ J $\frac{1}{4}$ W               |
| R304   | 2412086005 | RD14B2E561J  | 560 $\Omega$ J $\frac{1}{4}$ W               |
| R303   | 2412088003 | RD14B2E681J  | 680 $\Omega$ J $\frac{1}{4}$ W               |
| R342   | 2412090004 | RD14B2E821J  | 820 $\Omega$ J $\frac{1}{4}$ W               |
| R138, 238,<br>319                                      | 2412092002 | RD14B2E102J  | 1K $\Omega$ J $\frac{1}{4}$ W                |
| R140, 240  | 2412096008 | RD14B2E152J  | 1.5K $\Omega$ J $\frac{1}{4}$ W              |
| R136, 236  | 2412100004 | RD14B2E222J  | 2.2K $\Omega$ J $\frac{1}{4}$ W              |
| R146, 246,<br>173, 273                                 | 2412101003 | RD14B2E242J  | 2.4K $\Omega$ J $\frac{1}{4}$ W              |
| R118, 218<br>161, 261,<br>164, 264                     | 2412102002 | RD14B2E272J  | 2.7K $\Omega$ J $\frac{1}{4}$ W              |
| R333, 343,<br>308                                      | 2412104000 | RD14B2E332J  | 3.3K $\Omega$ J $\frac{1}{4}$ W              |
| R317   | 2412106008 | RD14B2E392J  | 3.9K $\Omega$ J $\frac{1}{4}$ W              |

| Ref. No.  | Part No.   | Part Name   | Remarks                         |
|---|------------|-------------|---------------------------------|
| R156, 256,<br>170, 270,<br>307, 328,<br>312, 325                      | 2412108006 | RD14B2E472J | 4.7K $\Omega$ J $\frac{1}{4}$ W |
| R167, 267,<br>168, 268  | 2412109005 | RD14B2E512J | 5.1K $\Omega$ J $\frac{1}{4}$ W |
| R111, 211,<br>121, 221,<br>149, 249,<br>166, 266,<br>314, 330         | 2412110007 | RD14B2E562J | 5.6K $\Omega$ J $\frac{1}{4}$ W |
| R159, 259   | 2412112005 | RD14B2E682J | 6.8K $\Omega$ J $\frac{1}{4}$ W |
| R169, 269   | 2412115002 | RD14B2E912J | 9.1K $\Omega$ J $\frac{1}{4}$ W |
| R109, 209,<br>160, 260,<br>171, 271,<br>301, 320,<br>344, 345         | 2412116001 | RD14B2E103J | 10K $\Omega$ J $\frac{1}{4}$ W  |
| R126, 226,<br>148, 248,<br>153, 253,<br>326, 341                      | 2412118009 | RD14B2E123J | 12K $\Omega$ J $\frac{1}{4}$ W  |
| R110, 210   | 2412119008 | RD14B2E133J | 13K $\Omega$ J $\frac{1}{4}$ W  |
| R113, 213,<br>144, 244,<br>165, 265,<br>162, 262,<br>340              | 2412120000 | RD14B2E153J | 15K $\Omega$ J $\frac{1}{4}$ W  |
| R130, 230,<br>172, 272,<br>315  | 2412122008 | RD14B2E183J | 18K $\Omega$ J $\frac{1}{4}$ W  |
| R107, 207,<br>116, 216,<br>142, 242,<br>331, 332                      | 2412124006 | RD14B2E223J | 22K $\Omega$ J $\frac{1}{4}$ W  |
| R108, 208   | 2412126004 | RD14B2E273J | 27K $\Omega$ J $\frac{1}{4}$ W  |
| R131, 231,<br>327   | 2412128002 | RD14B2E333J | 33K $\Omega$ J $\frac{1}{4}$ W  |
| R101, 201,<br>157, 257,<br>318  | 2412130003 | RD14B2E393J | 39K $\Omega$ J $\frac{1}{4}$ W  |
| R124, 224,<br>129, 229,<br>134, 234,<br>135, 235,<br>151, 251,<br>339 | 2412132001 | RD14B2E473J | 47K $\Omega$ J $\frac{1}{4}$ W  |
| R115, 215,<br>117, 217,<br>145, 245,<br>329                           | 2412134009 | RD14B2E563J | 56K $\Omega$ J $\frac{1}{4}$ W  |
| R133, 233,<br>158, 258  | 2412136007 | RD14B2E683J | 68K $\Omega$ J $\frac{1}{4}$ W  |
| R311  | 2412139004 | RD14B2E913J | 91K $\Omega$ J $\frac{1}{4}$ W  |
| R122, 222,<br>139, 239,<br>112, 212,<br>313, 316                      | 2412140006 | RD14B2E104J | 100K $\Omega$ J $\frac{1}{4}$ W |
| R127, 227,<br>128, 228,<br>154, 254,<br>155, 255,<br>306              | 2412150009 | RD14B2E274J | 270K $\Omega$ J $\frac{1}{4}$ W |



| Ref. No.   | Part No.   | Part Name     | Remarks                                     |
|--|------------|---------------|---|
| R143, 243,<br>102, 202,<br>103, 203,<br>141, 241   | 2412152007 | RD14B2E334J   | 330K $\Omega$ $\frac{1}{4}$ W               |
| R114, 214,<br>174, 274   | 2412158001 | RD14B2E564J   | 560K $\Omega$ $\frac{1}{4}$ W               |
| R106, 206  | 2412162000 | RD14B2E824J   | 820K $\Omega$ $\frac{1}{4}$ W               |
| R337   | 2410159002 | RD12B2H820J   | 82 $\Omega$ $\frac{1}{2}$ W                 |
| R119, 219,<br>120, 220   | 2410169005 | RD12B2H221J   | 220 $\Omega$ $\frac{1}{4}$ W                |
| R125, 225,<br>152, 252   | 2452197006 | RN14K2E392F   | Metal film<br>3.9K $\Omega$ $\frac{1}{4}$ W |
| Vr101, 201   | EP-5462H7  | SOLID VOLUME  | 1K $\Omega$                                 |
| Vr302  | EP-5462H11 | SOLID VOLUME  | 4.7K $\Omega$                               |
| Vr103, 203   | EP-5462H13 | SOLID VOLUME  | 10K $\Omega$                                |
| Vr102, 202,<br>106, 206  | EP-5462H17 | SOLID VOLUME  | 47K $\Omega$                                |
| Vr301  | EP-5462H18 | SOLID VOLUME  | 68K $\Omega$                                |
| Vr107, 207   | EP-5462H20 | SOLID VOLUME  | 150K $\Omega$                               |
| Vr105, 205   | EP-5462H22 | SOLID VOLUME  | 330K $\Omega$                               |
| VR301  | 2118047005 | V1620V25KA103 | 10K $\Omega$                                |
| VR302  | 2118040112 | V1611V25KA503 | 50K $\Omega$                                |
| <b>CAPACITOR GROUP</b>   |            |               |   |
| C308   | 2544004007 | CE04W0J221=   | Electrolytic<br>220 $\mu$ F 6.3V            |
| C105, 205,<br>127, 227,<br>155, 255,<br>126, 226   | 2544009002 | CE04W1A470=   | 47 $\mu$ F 10V                              |
| C109, 209,<br>111, 211,<br>112, 212,<br>115, 215,<br>122, 222,<br>123, 223,<br>140, 240,<br>143, 243,<br>158, 258,<br>159, 259,<br>129, 229,<br>130, 230,<br>131, 231,<br>132, 232,<br>139, 239,<br>315, 320 | 2544015009 | CE04W1C100=   | 10 $\mu$ F 16V                              |
| C316   | 2544016008 | CE04W1C330=   | 33 $\mu$ F 16V                              |
| C113, 213,<br>114, 214,<br>303, 304  | 2544017007 | CE04W1C470=   | 47 $\mu$ F 16V                              |
| C301, 321  | 2544019005 | CE04W1C221    | 220 $\mu$ F 16V                             |
| C120, 220,<br>137, 237,<br>305   | 2549014021 | CE04W1HR33M   | 0.33 $\mu$ F 50V                            |
| C302, 306,<br>319  | 2549014021 | CE04W1H010=   | 1 $\mu$ F 50V                               |
| C307, 314  | 2544034006 | CE04W1V4R7=   | 4.7 $\mu$ F 35V                             |
| C313   | 2544035005 | CE04W1V100=   | 10 $\mu$ F 35V                              |
| C116, 216,<br>133, 233   | 2543014027 | CE04D1C100MBP | 10 $\mu$ FBP 16V                            |
| C125, 225,<br>142, 242   | 2545007003 | CA92F1CR33M   | 0.33 $\mu$ F 16V                            |
| C107, 207  | 2533603008 | CC45SL1H100D  | Ceramic<br>10PF 50V                         |
| C102, 202  | 2533620007 | CC45SL1H510J  | 51PF 50V                                    |
| C128, 228  | 2533625002 | CC45SL1H820J  | 82PF 50V                                    |
| C156, 256,<br>161, 261   | 2533657009 | CC45SL1H101K  | 100PF 50V                                   |

| Ref. No.   | Part No.   | Part Name          | Remarks                   |
|--|------------|--------------------|---------------------------|
| C101, 201  | 2533631009 | CC45SL1H151K       | 150PF 50V                 |
| C144, 244  | 2533643000 | CC45SL1H471J       | 470PF 50V                 |
| C160, 260  | 2533658008 | CK45SL1H121K       | 120PF 50V                 |
| C157, 257  | 2531055056 | CK45B1H221K        | 220PF 50V                 |
| C146, 246  | 2551060005 | CQ93M1H102K        | Film<br>0.001 $\mu$ F 50V |
| C311   | 2551064001 | CQ93M1H222K        | 0.0022 $\mu$ F 50V        |
| C106, 206,<br>151, 251                           | 2551065000 | CQ93M1H272K        | 0.0027 $\mu$ F 50V        |
| C148, 248  | 2551066009 | CQ93M1H332K        | 0.0033 $\mu$ F 50V        |
| C118, 218,<br>135, 235                           | 2551120084 | CQ93M1H472J        | 0.0047 $\mu$ F 50V        |
| C110, 210,<br>312                                | 2551068007 | CQ93M1H472K        | 0.0047 $\mu$ F 50V        |
| C153, 253  | 2551069006 | CQ93M1H562K        | 0.0056 $\mu$ F 50V        |
| C310   | 2551070008 | CQ93M1H682K        | 0.0068 $\mu$ F 50V        |
| C152, 252  | 2551121009 | CQ93M1H682J        | 0.0068 $\mu$ F 50V        |
| C147, 247  | 2551072006 | CQ93M1H103K        | 0.01 $\mu$ F 50V          |
| C145, 245,<br>317, 318,<br>150, 250              | 2551073005 | CQ93M1H123K        | 0.012 $\mu$ F 50V         |
| C117, 217,<br>119, 219,<br>134, 234,<br>136, 236 | 2551121041 | CQ93M1H153J        | 0.015 $\mu$ F 50V         |
| C149, 249  | 2551076002 | CQ93M1H223K        | 0.022 $\mu$ F 50V         |
| C154, 254  | 2551078000 | CQ93M1H333K        | 0.033 $\mu$ F 50V         |
| C108, 208  | 2551080001 | CQ93M1H473K        | 0.047 $\mu$ F 50V         |
| C121, 221,<br>124, 224,<br>138, 238,<br>141, 241 | 2551084007 | CQ93M1H104K        | 0.1 $\mu$ F 50V           |
| C309   | 2554036007 | CQ93P2J332K        | 0.0033 $\mu$ F 630V       |
| <b>OTHER PARTS GROUP</b>                         |            |                    |                           |
| L104, 204  | 2310802103 | TRAP COIL          |                           |
| L101, 201  | 2310818003 | TRAP FILTER        |                           |
| L102, 202  | 2328036000 | MPX FILTER         |                           |
| L103, 203  | TRT094436  | INDUCTOR           |                           |
| T301   | 2310806002 | OSC COIL           |                           |
| RL301  | 2140020003 | REED RELAY         |                           |
| S303   | 2123321004 | SELECTOR SWITCH    |                           |
| S301, 302  | 2129133005 | PUSH SWITCH        |                           |
|  | 2049616000 | MIC JACK           |                           |
|  | 2049625004 | HEAD PHONE JACK    |                           |
|  | 2048021007 | 4P CONNECTOR BASE  |                           |
|  | 2228357106 | AUDIO P.W. BOARD   |                           |
|  | 2032075001 | 2P CONNECTOR BASE  |                           |
|  | 2035622008 | 3P MINI CONNE. PIN |                           |
|  | 2035622024 | 4P MINI CONNE. PIN |                           |
|  | EP-5667H2  | WRAPPING PIN       |                           |

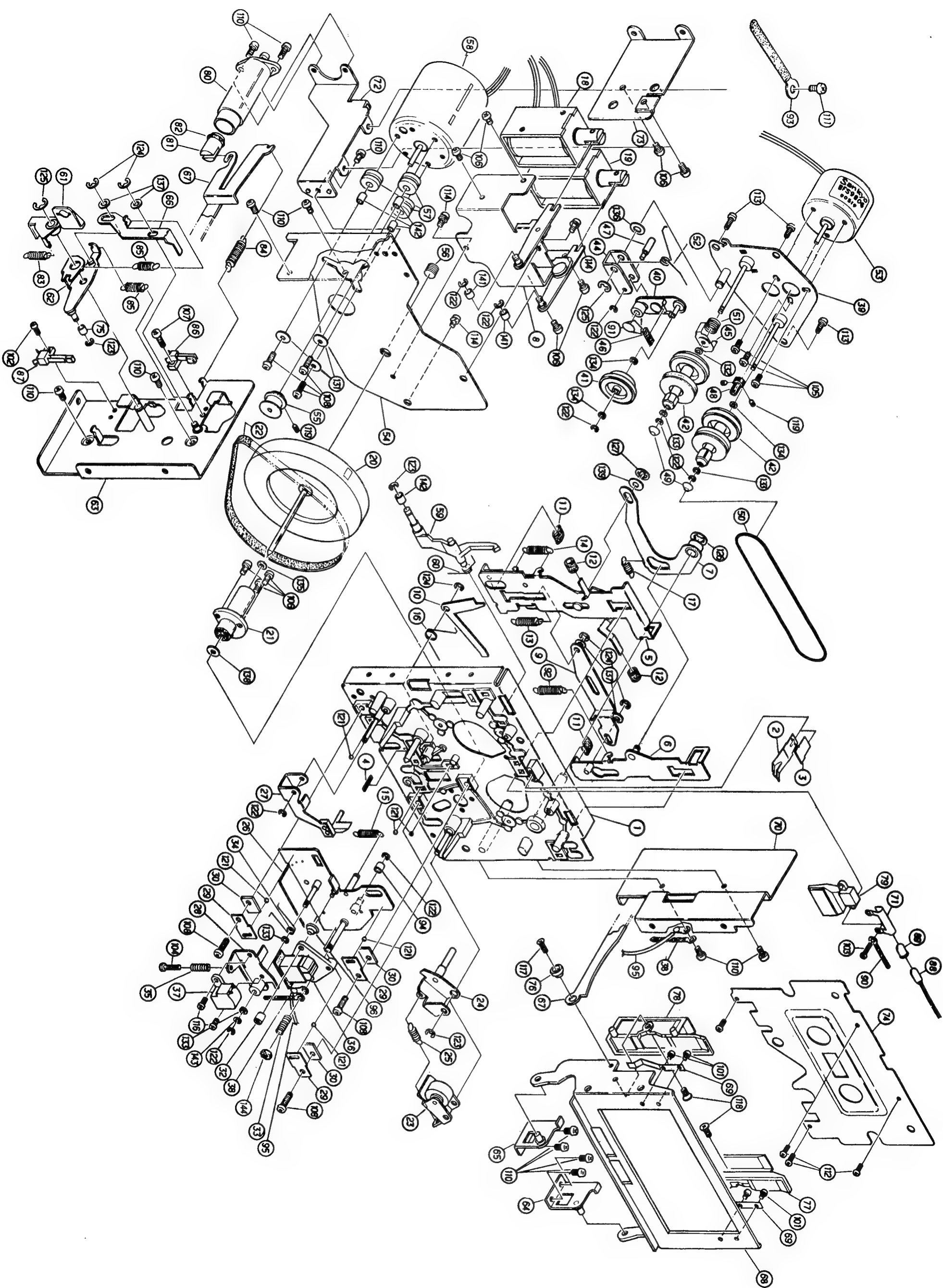
# PARTS LIST

## KU-378H LOGIC AND POWER UNIT

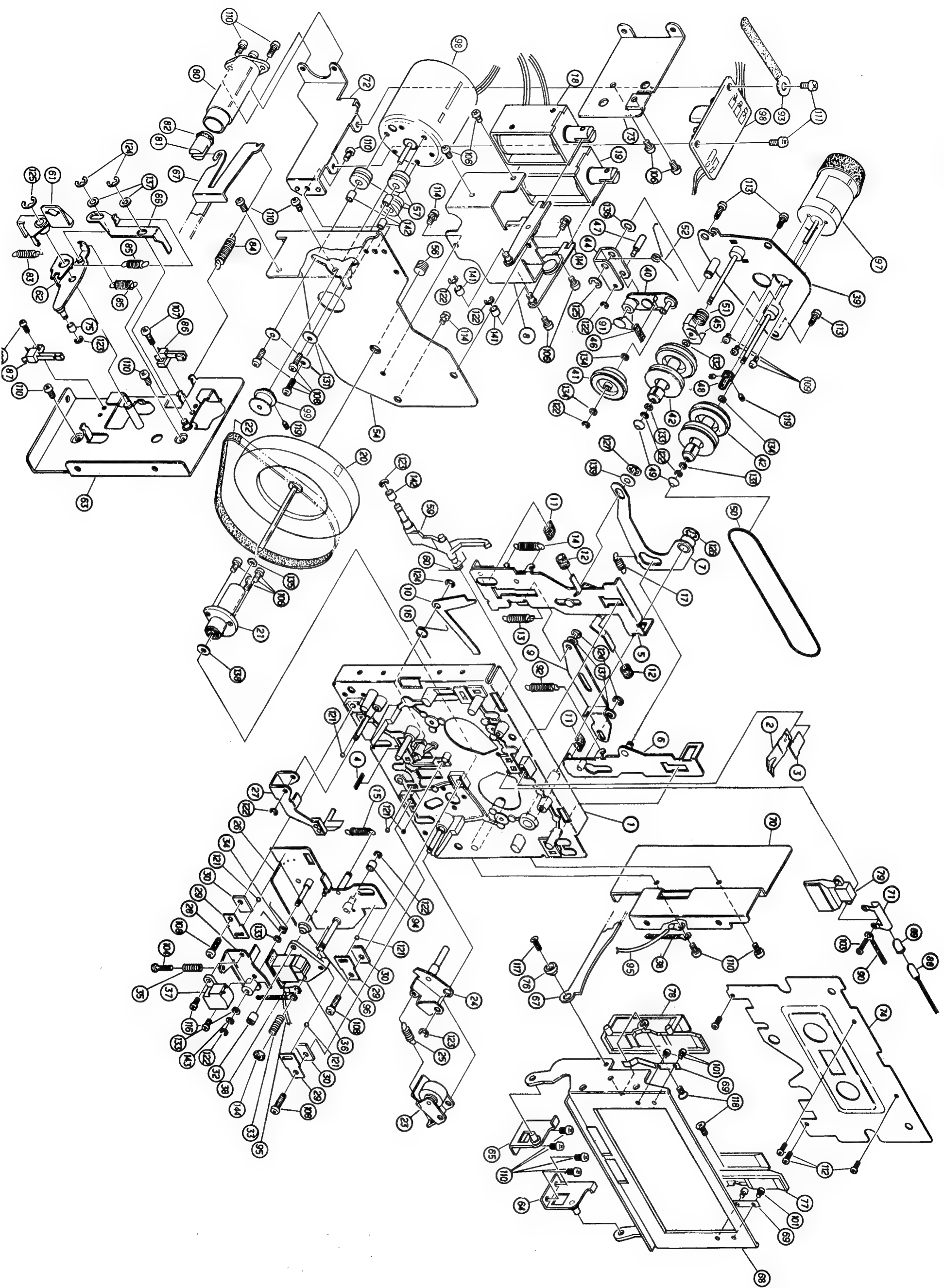
| Ref. No.   | Part No.   | Part Name      | Remarks                |
|--|------------|----------------|------------------------|
| SEMICONDUCTOR GROUP  |            |                |                        |
| IC4  | 2620327006 | HD74LS00P      | HALL IC                |
| IC2  | 2620128001 | HD74LS02P      |                        |
| IC7  | 2620129013 | HD74LS04P      |                        |
| IC3  | 2620291006 | HD74LS08P      |                        |
| IC5  | 2620328005 | HD74LS10P      |                        |
| IC6  | 2620294003 | HD74LS32P      |                        |
| IC1  | 2620283001 | BA843          |                        |
| IC8  | 2630076004 | HA17901P       |                        |
| IC901  | 2630139006 | μPC78M12H      |                        |
| IC9  | 2680028002 | DN-6838        |                        |
| TR4, 7, 9,<br>10, 14,<br>902, 903  | 2710102005 | 2SA1015Y       |                        |
| TR901  | 2720055029 | 2SB772(Q/P)    |                        |
| TR1~3, 5,<br>6, 8, 12, 13,<br>15~17, 19  | 2730204019 | 2SC2320F       |                        |
| TR11   | 2740078031 | 2SD882(Q/P)    |                        |
| D1~30  | 2760049008 | 1S2076         |                        |
| D901, 902  | 2760246005 | RB152          |                        |
| ZD1  | 2760173026 | HZ6B           |                        |
| RESISTOR GROUP   |            |                |                        |
| R1, 3~6  | 2412044005 | RD14B2E100J    | Carbon film<br>10ΩJ ¼W |
| R2, 7, 8, 36   | 2412068007 | RD14B2E101J    | 100ΩJ ¼W               |
| R30  | 2412072006 | RD14B2E151J    | 150ΩJ ¼W               |
| R29  | 2412074004 | RD14B2E181J    | 180ΩJ ¼W               |
| R79  | 2412076002 | RD14B2E221J    | 220ΩJ ¼W               |
| R22  | 2412084007 | RD14B2E471J    | 470ΩJ ¼W               |
| R24, 42  | 2412086005 | RD14B2E561J    | 560ΩJ ¼W               |
| R35  | 2412090004 | RD14B2E821J    | 820ΩJ ¼W               |
| R13, 21, 23,<br>27, 31, 34   | 2412092002 | RD14B2E102J    | 1KΩJ ¼W                |
| R33, 40, 44  | 2412100004 | RD14B2E222J    | 2.2KΩJ ¼W              |
| R76, 77  | 2412104000 | RD14B2E332J    | 3.3KΩJ ¼W              |
| R11, 12, 14,<br>20, 25, 32,<br>37, 45, 50,<br>55, 60, 63,<br>67, 72, 78,<br>904, 905 | 2412108006 | RD14B2E472J    | 4.7KΩJ ¼W              |
| R43  | 2412110007 | RD14B2E562J    | 5.6KΩJ ¼W              |
| R901, 902  | 2412112005 | RD14B2E682J    | 6.8KΩJ ¼W              |
| R39  | 2412114003 | RD14B2E822J    | 8.2KΩJ ¼W              |
| R18, 19, 26,<br>28, 38, 41,<br>51  | 2412216001 | RD14B2E103J    | 10KΩJ ¼W               |
| R64, 65  | 2412120000 | RD14B2E153J    | 15KΩJ ¼W               |
| R61, 62, 66  | 2412124006 | RD14B2E223J    | 22KΩJ ¼W               |
| R9, 10   | 2412128002 | RD14B2E333J    | 33KΩJ ¼W               |
| R16, 17, 57  | 2412130003 | RD14B2E393J    | 39KΩJ ¼W               |
| R52~54,<br>58, 59, 70  | 2412132001 | RD14B2E473J    | 47KΩJ ¼W               |
| R49, 69, 903   | 2412134009 | RD14B2E563J    | 56KΩJ ¼W               |
| R71  | 2412136007 | RD14B2E683J    | 68KΩJ ¼W               |
| R68  | 2412138005 | RD14B2E823J    | 82KΩJ ¼W               |
| R46~48, 56   | 2412140006 | RD14B2E104J    | 100KΩJ ¼W              |
| Metal oxide  |            |                |                        |
| R906, 907  | 2440025025 | RS14B3A470JNBF | 47ΩJ 1W                |

| Ref. No.                 | Part No.   | Part Name            | Remark                   |
|--------------------------|------------|----------------------|--------------------------|
| <b>CAPACITOR GROUP</b>   |            |                      |                          |
| C11, 18, 19              | 2544009002 | CE04W1A470=          | Electrolytic<br>47μF 10V |
| C25                      | 2544010004 | CE04W1A101=          | 100μF 10V                |
| C16, 21, 904             | 2544015009 | CE04W1C100=          | 10μF 16V                 |
| C14, 17, 26              | 2544054002 | CE04W1C220=          | 22μF 16V                 |
| C12                      | 2544016008 | CE04W1C330=          | 33μF 16V                 |
| C905, 906                | 2544021006 | CE04W1C471           | 470μF 16V                |
| C901, 902,<br>907, 908   | 2544032008 | CE04W1E102           | 1000μF 25V               |
| C27                      | 2544043000 | CE04W1HR47=          | 0.47μF 50V               |
| C13                      | 2544044009 | CE04W1H010=          | 1μF 50V                  |
| C10, 15, 20,<br>22~24    | 2544034006 | CE04W1V4R7=          | 4.7μF 35V                |
| <b>Film</b>              |            |                      |                          |
| C7, 8                    | 2551072006 | CQ93M1H103K          | 0.01μF 50V               |
| C9                       | 2551076002 | CQ93M1H223K          | 0.022μF 50V              |
| <b>OTHER PARTS GROUP</b> |            |                      |                          |
|                          | 2228304201 | LOGIC & POWER P.W.B. |                          |
|                          | 4178028004 | HEAT SINK            |                          |
|                          | 4178046002 | HEAT SINK(Z)         |                          |
|                          | 1038143006 | HALL IC GUIDE        |                          |
|                          | 2035622066 | 5P MINI CONNE. PIN   |                          |
|                          | 2035622095 | 9P MINI CONNE. PIN   |                          |
|                          | 2050082021 | 2P WRAPPING TERMINAL |                          |
|                          | 2050082034 | 3P WRAPPING TERMINAL |                          |
|                          | 2050082047 | 4P WRAPPING TERMINAL |                          |
|                          | 2058007008 | BOARD IN TERMINAL    |                          |

EXPLODED VIEW OF MECHANISM UNIT (DR-320)



EXPLODED VIEW OF MECHANISM UNIT (DR-330)



PARTS LIST OF MECHANISM UNIT

| Ref. No. | Part No.   | Part Name                   | Remark |
|----------|------------|-----------------------------|--------|
| 1        | 9J250101   | MECH. CHASSIS ASS'Y         |        |
| 2        | 9J250112   | C. SUPPORT SPRING           |        |
| 3        | 9J250113   | SPRING PLATE                |        |
| 4        | 9J250131   | FELT                        |        |
| 5        | 9J250201   | SLIDE BRACKET ASS'Y         |        |
| 6        | 9J250202   | SIDE LEVER ASS'Y            |        |
| 7        | 9J250203   | BRAKE LEVER ASS'Y           |        |
| 8        | 9J250204   | SOLENOID BRACKET ASS'Y      |        |
| 9        | 9J250215   | CONNECTING LEVER            |        |
| 10       | 9J250217   | CUE LEVER                   |        |
| 11       | 9J250272   | SIDE STOPPER                |        |
| 12       | 9J250273   | BRAKE SHOE                  |        |
| 13       | 9J250281   | SPRING                      |        |
| 14       | 9J250282   | SPRING                      |        |
| 15       | 9J250283   | SPRING                      |        |
| 16       | 9J250284   | TORSION SPRING              |        |
| 17       | 9J250285   | BRAKE SPRING                |        |
| 18       | 9J250291   | SOLENOID                    |        |
| 19       | 9J250292   | FLYWHEEL ASS'Y              |        |
| 20       | 9J250301   | BEARING ASS'Y               |        |
| 21       | 9J180302   | MAIN BELT                   |        |
| 22       | 9J180372   | P. ROLLER BRACKET ASS'Y     |        |
| 23       | 9J250401   | PRESSURE BRACKET ASS'Y      |        |
| 24       | 9J250402   | P. ROLLER SPRING            |        |
| 25       | 9J250481   | HEAD PLATE ASS'Y            |        |
| 26       | 9J250501   | DETECTING ARM ASS'Y         |        |
| 27       | 9J250502   | E. HEAD BRACKET ASS'Y       |        |
| 28       | 9J250503   | SPRING PLATE                |        |
| 29       | 9J250514   | BRACKET                     |        |
| 30       | 9J250515   |                             |        |
| 31       |            |                             |        |
| 32       | 9J250553   | ADJUST SCREW                |        |
| 33       | 9J250581   | H. SUPPORT SPRING           |        |
| 34       | 9J250582   | TORSION SPRING              |        |
| 35       | 9J250583   | ADJUST SPRING               |        |
| 36       | 3918030004 | R/P HEAD ASS'Y              |        |
| 37       | 3918031003 | E. HEAD                     |        |
| 38       | 9J250597   | LUG                         |        |
| 39       | 9J250701   | REEL BASE ASS'Y             |        |
| 40       | 9J250702   | F.R. LEVER ASS'Y            |        |
| 41       | 9J250705   | F.R. IDLER                  |        |
| 42       | 9J250703   | TAKE UP REEL ASS'Y          |        |
| 43       |            |                             |        |
| 44       | 9J250712   | F.R. BRACKET SPRING SUPPORT |        |
| 45       | 9J250721   | FELT                        |        |
| 46       | 9J250731   | F.R. BRACKET PIN            |        |
| 47       | 9J250745   | REEL MOTOR PULLEY           |        |
| 48       | 9J250754   | REEL CAP                    |        |
| 49       | 9J010761   | COUNTER BELT                |        |
| 50       | 9J141071   | SUPPLY SPRING               |        |
| 51       | 9J250781   | TORSION SPRING              |        |
| 52       | 9J250782   | REEL MOTOR                  |        |
| 53       | 2178050100 | MOTOR BRACKET               |        |
| 54       | 9J251211   | MOTOR PULLEY                |        |
| 55       | 9J251251   | THRUST SCREW                |        |
| 56       | 9J130361   | MOTOR CUSHION               |        |
| 57       | 9J151274   | CAPSTAN MOTOR               |        |
| 58       | 2178049108 | REC LEVER ASS'Y             |        |
| 59       | 9J251301   | TORSION SPRING              |        |
| 60       | 9J251381   | EJECT LEVER ASS'Y           |        |
| 61       | 9J251701   | LOCK LEVER ASS'Y            |        |
| 62       | 9J251702   | LOCK BRACKET (L) ASS'Y      |        |
| 63       | 9J251703   | HINGE (R) ASS'Y             |        |
| 64       | 9J181704   | HINGE (L) ASS'Y             |        |
| 65       | 9J181705   | SLIDE LEVER                 |        |
| 66       | 9J251713   | DAMPER ARM                  |        |
| 67       | 9J251715   | CASSETTE BOX                |        |
| 68       | 9J251716   | C' PRESSURE SPRING          |        |
| 69       | 9J251717   | SIDE BRACKET (R)            |        |
| 70       | 9J251719   | LAMP BRACKET                |        |
| 71       | 9J251710   | DAMPER BRACKET              |        |
| 72       | 9J2517111  |                             |        |

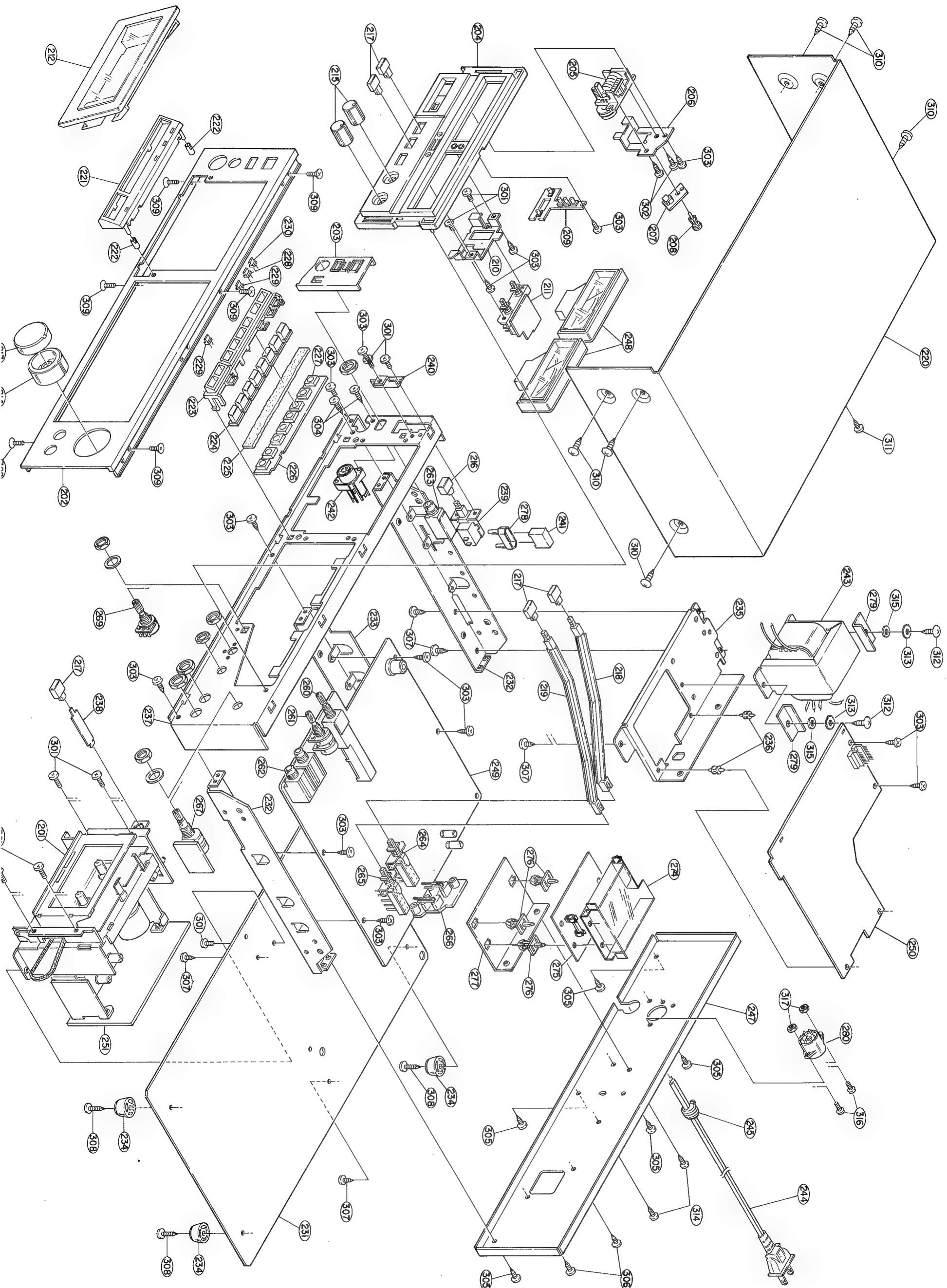
| Ref. No. | Part No.   | Part Name           | Remark            |
|----------|------------|---------------------|-------------------|
| 73       | 9J2517112  | P.W.B. HOLDER       |                   |
| 74       | 9J251721   | ESC PLATE           |                   |
| 75       | 9J251752   | ROLLER              |                   |
| 76       | 9J251753   | BOSS                |                   |
| 77       | 9J251761   | CASSETTE HOLDER (R) |                   |
| 78       | 9J251762   | CASSETTE HOLDER (L) |                   |
| 79       | 9J251763   | LAMP LENS           |                   |
| 80       | 9J201761   | DAMPER CYLINDER     |                   |
| 81       | 9J201762   | DAMPER PISTON       |                   |
| 82       | 9J201771   | O RING              |                   |
| 83       | 9J251781   | EJECT LEVER SPRING  |                   |
| 84       | 9J251782   | DAMPER SPRING       |                   |
| 85       | 9J540P20   | LOCK LEVER SPRING   |                   |
| 86       | 9J251791   | SWITCH              |                   |
| 87       | 9J251792   | SWITCH              |                   |
| 88       | 9J251793   | LAMP                |                   |
| 89       | 9J251799   | LAMP COVER          |                   |
| 90       | 9J11140301 | LUG                 |                   |
| 91       | 9J250783   | TORSION SPRING      |                   |
| 92       | 9J250286   | SPRING              |                   |
| 93       | 9J251795   | LUG                 |                   |
| 94       | 9J250559   | CALLER              |                   |
| 95       | 9J250598   | WIRE ASS'Y          |                   |
| 96       | 9J250585   | SPRING              |                   |
| 97       | 2178058005 | REEL MOTOR          |                   |
| 98       | 2178052001 | CAPSTAN MOTOR       |                   |
| 99       | 9J251252   | MOTOR PULLEY        |                   |
| 100      |            |                     |                   |
| 101      | 9JDRF101   | SCPMs 2002          | DR-330 model only |
| 102      | 4711101016 | 2 x 4 CPS           |                   |
| 103      | 9JDRF103   | SCPMs 2007          |                   |
| 104      | 4711810006 | 2 x 10 CPS          |                   |
| 105      | 9JDRF 105  | SCPMs 2603          |                   |
| 106      | 4711201013 | 2.6 x 4 CPS         |                   |
| 107      | 4211202012 | 2.6 x 5 CPS         |                   |
| 108      | 4711204010 | 2.6 x 8 CPS         |                   |
| 109      | 9JDRF109   | 2 x 3 CPS           |                   |
| 110      | 9JDRF110   | SCPTs 2605          |                   |
| 111      | 9JDRF111   | 3 x 6 FT            | DR-330 model only |
| 112      | 9JDRF112   | SCPTB 2006          |                   |
| 113      | 4733800007 | 3 x 6 CBTS          |                   |
| 114      | 4700001004 | 2.6 x 4 CPS (SW)    |                   |
| 115      | 4700003002 | 2.6 x 6 CPS (SW)    |                   |
| 116      | 4714102012 | 2 x 5 CTS           |                   |
| 117      | 4712102014 | 2 x 5 CFS           |                   |
| 118      | 9JDRF118   | BCFMS 2604          |                   |
| 119      | 9JDRF119   | SSNSs 2002          |                   |
| 120      |            |                     |                   |
| 121      | 9JDRF121   | SSB020000           | DR-320 model only |
| 122      | 4761000002 | 1.5E RING           |                   |
| 123      | 9JDRF123   | E1R900000           |                   |
| 124      | 9JDRF124   | E2R300000           |                   |
| 125      | 4761003009 | 3E RING             |                   |
| 126      | 4761004008 | 4E RING             |                   |
| 127      | 9JDRF127   | STOP RING           |                   |
| 128      |            |                     |                   |
| 129      |            |                     |                   |
| 130      |            |                     |                   |
| 131      | 9JDRF131   | SFW261030           |                   |
| 132      | 9JDRF132   | GNW200413           |                   |
| 133      | 9JDRF133   | GNW200425           |                   |
| 134      | 9JDRF134   | GNW200450           |                   |
| 135      | 9JDRF135   | GNW260550           |                   |
| 136      | 9JDRF136   | GNW401050           |                   |
| 137      | 9JDRF137   | NYW300550           |                   |
| 138      | 9JDRF138   | NYW240650           |                   |
| 139      | 9JDRF139   | WASHER              |                   |
| 140      |            |                     |                   |
| 141      | 9JDRF141   | SSP304035           |                   |
| 142      | 9JDRF142   | SSP304060           |                   |
| 143      | 9JDRF143   | SFW204030           |                   |
| 144      | 4756006008 | 3 NUT               |                   |

PARTS LIST OF EXPLODED VIEW

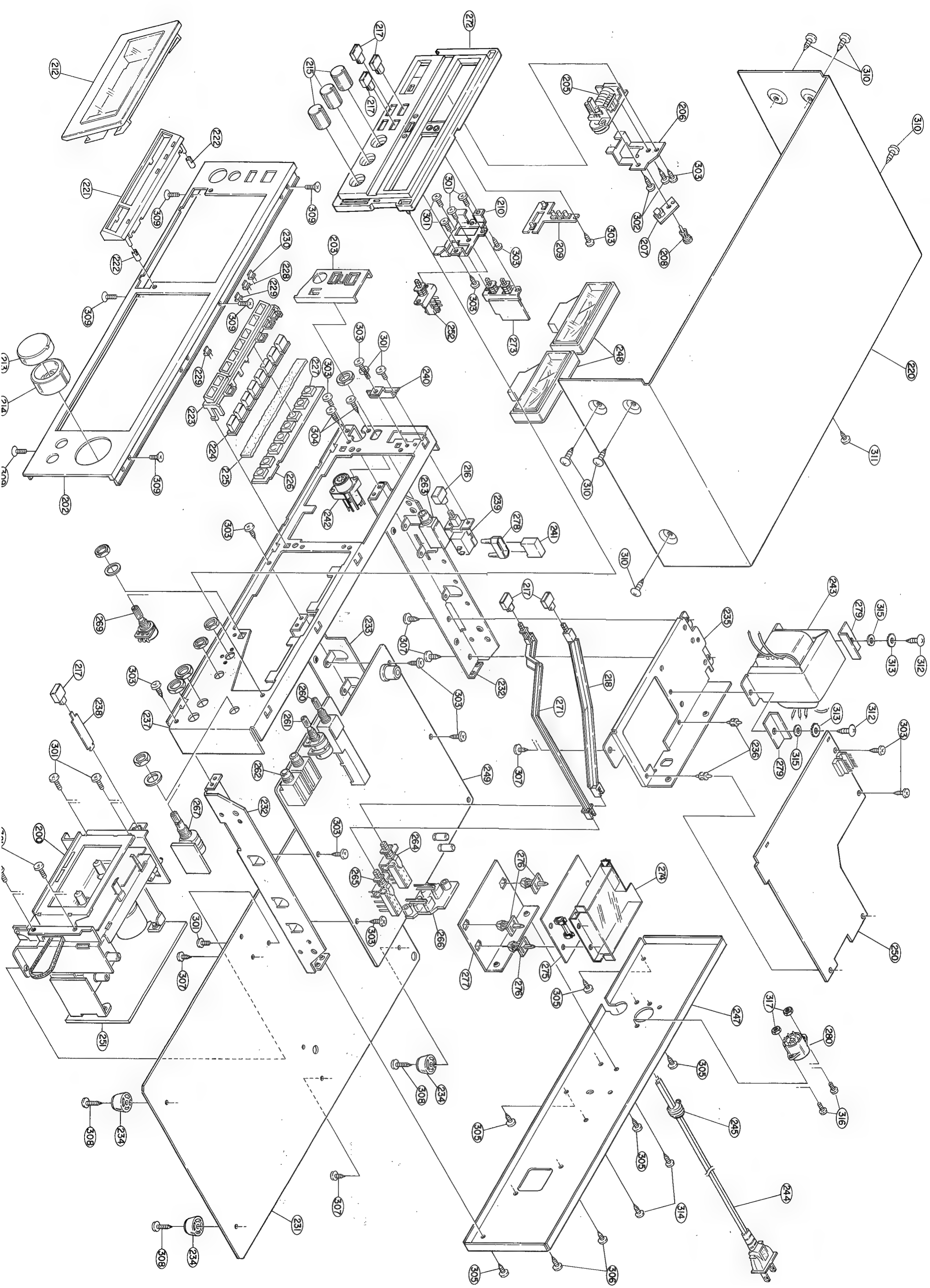
| Ref. No. | Part No.    | Part Name            | Remark                            |
|----------|-------------|----------------------|-----------------------------------|
| 200      | 3388006008  | V.MECH.[22] UNIT     | DR-330 model only                 |
| 201      | 3388005009  | V.MECH.[21] UNIT     |                                   |
| 202      | 1028206005  | FRONT PANEL          |                                   |
| 203      | 1038130200  | KNOB GUIDE           |                                   |
| 204      | 1038149000  | FRONT ESC.           |                                   |
| 205      | 4598007304  | COUNTER              |                                   |
| 206      | 4418567209  | COUNTER BRACKET      |                                   |
| 207      | KU-0378     | LOGIC & POWER UNIT   |                                   |
| 208      | 4498005008  | CANOE RIVET          |                                   |
| 209      | KU0380      | PEAK INDICATOR UNIT  |                                   |
| 210      | 4418568208  | SWITCH BRACKET       | DR-320 model only                 |
| 211      | KU-0374     | TIMER P.W.B. UNIT    |                                   |
| 212      | 1038154008  | DOOR FRAME ASS'Y     |                                   |
| 213      | 1128065007  | V. KNOB (A) ASS'Y    |                                   |
| 214      | 1128066103  | V. KNOB (B) ASS'Y    |                                   |
| 215      | 1128067005  | V. KNOB (C) ASS'Y    |                                   |
| 216      | 1138106105  | POWER SW KNOB ASS'Y  |                                   |
| 217      | 1138107201  | PUSH KNOB            |                                   |
| 218      | 4318056108  | PUSH LEVER (D)       |                                   |
| 219      | 4318059105  | PUSH LEVER (F)       |                                   |
| 220      | 1028137307  | TOP COVER ASS'Y      | DR-320 model only                 |
| 221      | 1038153009  | BUTTON ESC.          |                                   |
| 222      | 4770196004  | PUSH NUT             |                                   |
| 223      | 1038121303  | BUTTON GUIDE         |                                   |
| 224      | 1038122205  | CONTROL BUTTON       |                                   |
| 225      | 4618088009  | CUSHION              |                                   |
| 226      | 2228301107  | CONTROL BUTTON BOARD |                                   |
| 227      | 2129130008  | PUSH SWITCH          |                                   |
| 228      | 3939094003  | LED                  |                                   |
| 229      | 3939095002  | LED                  |                                   |
| 230      | 3939096001  | LED                  | RED GRN ORG.                      |
| 231      | 1058055307  | BOTTOM PLATE         |                                   |
| 232      | 4118144207  | ANGLE                |                                   |
| 233      | 4118144210  | ANGLE                |                                   |
| 234      | MD-5268     | FOOT                 |                                   |
| 235      | 4128225404  | TRANS BRACKET        |                                   |
| 236      | 4128464003  | TRANS BRACKET ASS'Y  |                                   |
| 237      | 4158026000  | P.W.B. SUPPORT       |                                   |
| 238      | 4118146506  | FRONT CHASSIS        |                                   |
| 239      | 4318053101  | EJECT PLATE          |                                   |
| 240      | 4418671101  | BRACKET              | American model only               |
| 241      | 2618006009  | SPARK KILLER         |                                   |
| 242      | 2049624306  | 8P JACK              |                                   |
| 243      | 2339039106  | POWER TRANS          |                                   |
| 244      | 2339040108  | POWER TRANS          |                                   |
| 245      | 2339040111  | POWER TRANS          |                                   |
| 246      | 2339042009  | POWER TRANS          |                                   |
| 247      | 2062019008  | AC CORD WITH PLUG    |                                   |
| 248      | 2062024006  | AC CORD WITH LABEL   |                                   |
| 249      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 250      | 2006019310  | AC 3P AC CORD        | Australian model only             |
| 251      | 20060202031 | AC CORD WITH PLUG    |                                   |
| 252      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 253      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 254      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 255      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 256      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 257      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 258      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 259      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 260      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 261      | 2006031026  | AC CORD WITH PLUG    | Multi-voltage models only         |
| 262      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 263      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 264      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 265      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 266      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 267      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 268      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 269      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 270      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 271      | 2006031026  | AC CORD WITH PLUG    | American and European models only |
| 272      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 273      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 274      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 275      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 276      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 277      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 278      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 279      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 280      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 281      | 2006031026  | AC CORD WITH PLUG    | Multi-voltage models only         |
| 282      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 283      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 284      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 285      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 286      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 287      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 288      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 289      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 290      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 291      | 2006031026  | AC CORD WITH PLUG    | Multi-voltage models only         |
| 292      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 293      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 294      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 295      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 296      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 297      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 298      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 299      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 300      | 2006031026  | AC CORD WITH PLUG    |                                   |
| 301      | 4713303016  | 3 x 6 CBS            |                                   |
| 302      | 4730253013  | 2.6 x 6 CBTS         |                                   |
| 303      | 4733800007  | 3 x 6 CBTS           |                                   |
| 304      | 4733800010  | 3 x 8 CBTS           |                                   |
| 305      | 4730353023  | 3 x 6 CBRTS          |                                   |
| 306      | 4730304030  | 3 x 8 CBRTS          |                                   |
| 307      | 4730453017  | 4 x 6 CBRTS          |                                   |
| 308      | 4730456014  | 4 x 12 CBRTS         |                                   |
| 309      | 4712303017  | 3 x 6 CFS            |                                   |
| 310      | 4734801005  | 4 x 8 CTS            |                                   |
| 311      | 4770064107  | FIXING SCREW         | Multi-voltage models only         |
| 312      | 4739013018  | 4 x 6 CPTS (FT)      |                                   |
| 313      | 4739014017  | 4 x 8 CPTS (FT)      |                                   |
| 314      | 4731303032  | 3 x 6 CBS (BLACK)    |                                   |
| 315      | 4751105014  | 4 WASHER             |                                   |
| 316      | 4713203035  | 2.6 x 6 CBS          |                                   |
| 317      | 4756004000  | 2.6N                 |                                   |



EXPLODED VIEW OF MODEL DR-320



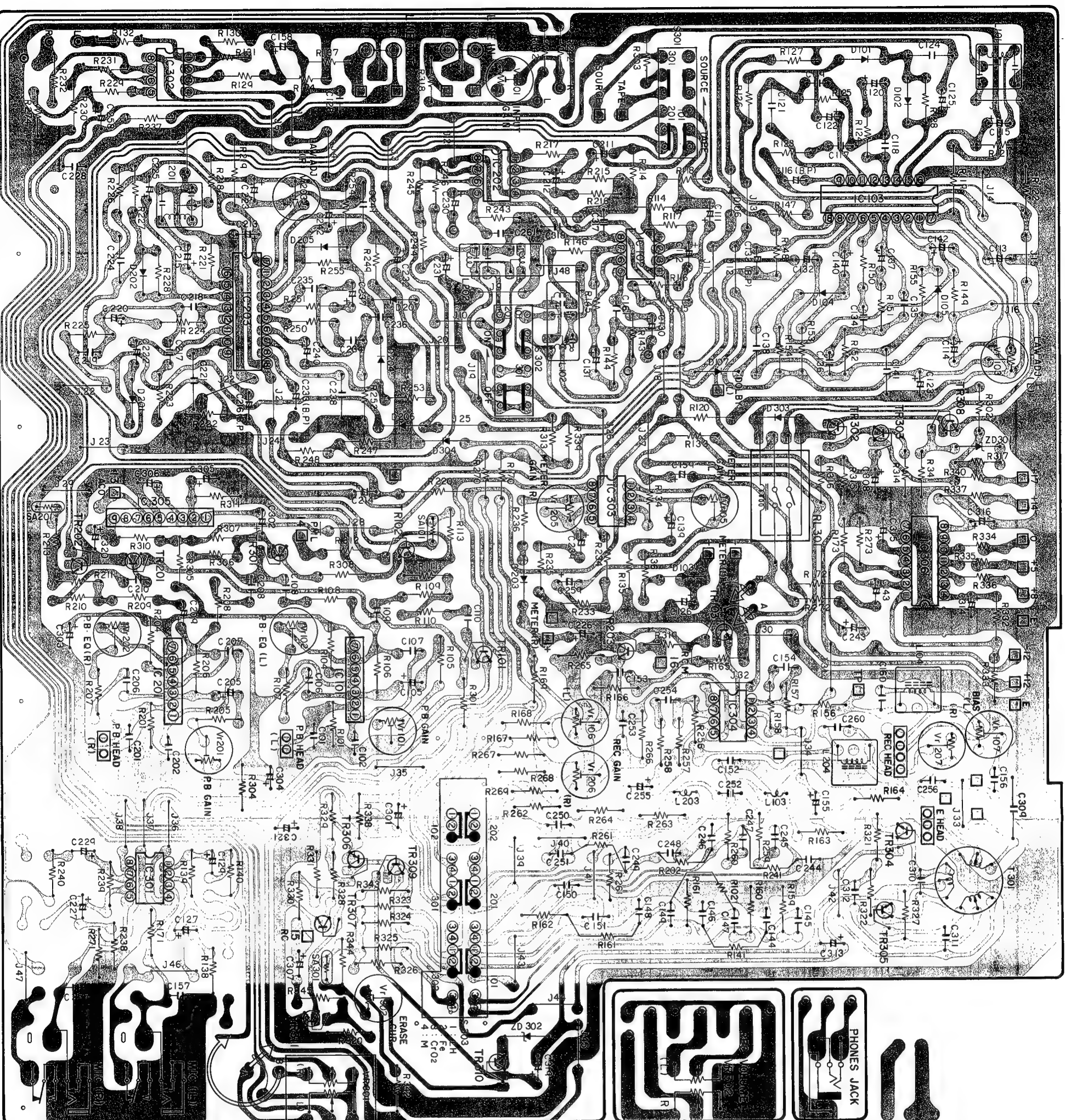
EXPLODED VIEW OF MODEL DR-330



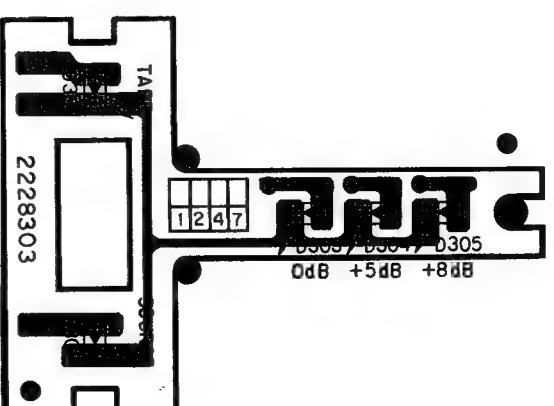




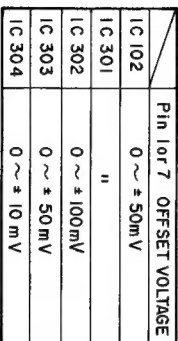


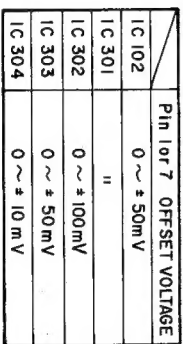


KU-380  
PEAK INDICATOR  
UNIT









## KU-379H DRIVER UNIT

| Ref. No.                            | Part No.   | Part Name            | Remark                    |
|-------------------------------------|------------|----------------------|---------------------------|
| <b>SEMICONDUCTOR GROUP</b>          |            |                      |                           |
| IC801                               | 2620326007 | BA6109               |                           |
| TR803, 807                          | 2710102005 | 2SA1015Y             |                           |
| TR802, 806                          | 2710117003 | 2SA1020Y             |                           |
| TR812                               | 2720055029 | 2SB772(Q/P)          |                           |
| TR801, 805,<br>809~811              | 2730204019 | 2SC2320F             |                           |
| TR804, 808                          | 2730212001 | 2SC2655Y             |                           |
| D805~810                            | 2760237001 | RV06                 |                           |
| ZD801                               | 2760052037 | HZ11B                |                           |
| ZD802                               | 2760185030 | HZ4B1                |                           |
| ZD803                               | 2760218017 | HZ9A2                |                           |
| D811                                | 2760001004 | 1N34A                |                           |
| <b>RESISTOR GROUP</b>               |            |                      |                           |
| R826                                | 2412044005 | RD14B2E100J          | Carbon film<br>10ΩJ ¼W    |
| R817                                | 2412076002 | RD14B2E221J          | 220ΩJ ¼W                  |
| R804, 812                           | 2412094000 | RD14B2E122J          | 1.2KΩJ ¼W                 |
| R801, 809                           | 2412096008 | RD14B2E152J          | 1.5KΩJ ¼W                 |
| R807, 815                           | 2412140000 | RD14B2E332J          | 3.3KΩJ ¼W                 |
| R823                                | 2412108006 | RD14B2E472J          | 4.7KΩJ ¼W                 |
| R806, 814                           | 2412112005 | RD14B2E682J          | 6.8KΩJ ¼W                 |
| R803, 805,<br>811, 813,<br>818, 819 | 2412116001 | RD14B2E103J          | 10KΩJ ¼W                  |
| R824, 825                           | 2412120000 | RD14B2E153J          | 15KΩJ ¼W                  |
| R822                                | 2440027023 | RS14B3A680JNBF       | Metal oxide<br>68ΩJ 1W    |
| R802, 810                           | 2440043023 | RS14B3A152JNBF       | 1.5KΩJ 1W                 |
| R821                                | 2440085023 | RS14B3D820JNBF       | 82ΩJ 2W                   |
| R808, 816                           | 2440129028 | RS14B3F100JNBF       | 10ΩJ 3W                   |
| <b>CAPACITOR GROUP</b>              |            |                      |                           |
| C808                                | 2544010004 | CE04W1A101=          | Electrolytic<br>100μF 10V |
| C807                                | 2544018006 | CE04W1C101=          | 100μF 16V                 |
| C804                                | 2544027000 | CE04W1E470=          | 47μF 25V                  |
| C803                                | 2544029008 | CE04W1E221=          | 220μF 25V                 |
| C801, 802                           | 2544034006 | CE04W1V4R7=          | 4.7μF 35V                 |
| C805                                | 2551072006 | CQ93M1H103K          | Film<br>0.01μF 50V        |
| C806                                | 2551084007 | CQ93M1H104K          | 0.1μF 50V                 |
| <b>OTHER PARTS GROUP</b>            |            |                      |                           |
|                                     | 2228343408 | DRIVER P.W.B.        |                           |
|                                     | 4178046002 | HEAT SINK(Z)         |                           |
|                                     | 4178062109 | HEAT SINK(L)         |                           |
|                                     | 2035622053 | 12P MINI CONNE. PIN  |                           |
|                                     | 2050082021 | 2P WRAPPING TERMINAL |                           |
|                                     | 2058007008 | BOARD IN TERMINAL    |                           |

## KU-0380 PEAK INDICATOR UNIT

| Ref. No. | Part No.   | Part Name             | Remark |
|----------|------------|-----------------------|--------|
|          | 3939078003 | LN222RP               | (RED)  |
|          | 3939099008 | LN422YP               | (YEL)  |
|          | 3939079002 | LN322GP               | (GRN)  |
|          | 2228303008 | PEAK INDICATOR P.W.B. |        |

## KU-0374 TIMER UNIT

| Ref. No. | Part No.   | Part Name       | Remark |
|----------|------------|-----------------|--------|
|          | 2129134101 | PUSH SWITCH     |        |
|          | 2228330107 | TIMER SW P.W.B. |        |

## KU-0375 TIMER UNIT

| Ref. No. | Part No.   | Part Name       | Remark |
|----------|------------|-----------------|--------|
|          | 2129139009 | PUSH SWITCH     |        |
|          | 2228330107 | TIMER SW P.W.B. |        |

## KU-333-1 POWER WIRING UNIT

| Ref. No. | Part No.   | Part Name      | Remark            |
|----------|------------|----------------|-------------------|
|          | 2228197010 | AC POWER BOARD |                   |
| R500     | 2410163001 | RD14B2H121J    | 120ΩJ ¼W          |
| C500     | 2518001007 | CP05C==AC103M  | 0.01μF<br>450V AC |
|          | FEP1287    | FUSE HOLDER    |                   |
| F1       | 2061015045 | FUSE           | 315mA 250V        |
|          | EE 1656    | BASE TERMINAL  |                   |

# DENON

## **NIPPON COLUMBIA CO., LTD.**

No. 14-14, 4-CHOME AKASAKA,  
MINATO-KU, TOKYO JAPAN

TEL: 03-584-8111

TLX: JAPANOLA J22591

CABLE: NIPPON COLUMBIA TOKYO